REPORT RESUMES

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INVESTIGATION OF MENTAL RETARDATION IN RELATION TO BILINGUAL AND SUBCULTURAL FACTORS.
BY- MCGRATH, G.D. AND OTHERS
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DESCRIPTORS- *BILINGUAL STUDENTS, *AMERICAN INDIAN, *EDUCATIONALLY DISADVANTAGED, *SOCIOECONOMIC INFLUENCES, SOCIOECONOMIC BACKGROUND, MENTAL RETARDATION, CULTURALLY DISADVANTAGED, IMMIGRANTS, SPECIAL CLASSES, CHILDREN, TEMPE, ARIZONA

THE PURPOSE OF THIS STUDY WAS TO INVESTIGATE THE DIFFERENCE BETWEEN TRUE MENTAL DEFICIENCY AND PSEUDOMENTAL DEFICIENCY DUE TO LANGUAGE, CULTURAL, AND SOCIOECONOMIC LIMITATIONS. THE FACTORS WERE STUDIED BY THE METHOD OF REPEATED TESTS OVER A 3-YEAR SPAN IN AN ADAPTED BUT RELATIVELY CONSTANT LEARNING SITUATION. MENTAL ACHIEVEMENT, LANGUAGE TESTS, AND SOCIOLOGICAL STUDY OF THE CHILDREN'S ENVIRONMENTS WERE USED AS CRITERIA. THE SUBJECTS WERE 188 RECENT IMMIGRANT MEXICAN AND INDIAN CHILDREN IN SPECIAL CLASSES FOR BILINGUAL CHILDREN. MENTAL RETARDATION IS APPARENT AMONG SOME BILINGUAL CHILDREN BUT OFTEN IS PSEUDO AS THE RESULT OF MANY FACTORS, INCLUDING SOCIOECONOMIC ATTITUDES, FAMILY BACKGROUND, AND OTHERS. TYPICAL SCHOOL PROGRAMS ARE NOT ADEQUATELY DESIGNED TO MEET THE NEEDS OR BRING OUT THE FULL POTENTIAL OF THESE BILINGUAL CHILDREN WHO HAVE HIGH MENTAL ABILITIES, AS DEMONSTRATED BY THE FACT THAT THEY HAVE DEVELOPED SOME FACILITY WITH TWO LANGUAGES. MORE STUDIES ARE RECOMMENDED AND THE NECESSITY OF CONTINUED WORK RELATED TO THE FIELD OF BILINGUAL CHILDREN IS MADE APPARENT THROUGHOUT THE STUDY. (GC)

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Investigation of Mental Retardation and Pseudo Mental Retardation in Relation to Bilingual and Sub-Cultural Factors

College of Education
Arizona State University
Tempe, Arizona

The research reported herein was performed pursuant to a contract with the United States Office of Education, Department of Health, Education, and Welfare.

PREFACE

In the informality of a preface to a research study it should be possible to let down the barriers of professional anonymity and give credit where it is due. It also provides an opportunity for identifying the division of responsibility for the various facets of a study that has involved the talents and questioning spirit of nearly 50 professional persons on a full or part-time basis.

Even at this point the anonymous participation of the cooperating teachers and school administrators will be retained, as promised throughout the three years of this study. However, their contribution must not be minimized by the absence of their names. Theirs was a key note in the total understanding of these children, and no words of thanks can begin to compensate for the hundreds of hours of record-keeping, evaluating, and consulting with other project personnel contributed by them.

The inspiration, information, and guidance provided by our national consultants gave a broad foundation of understanding to those teachers and school administrators (and to many other teachers and administrators in their school systems) and to the staff members from Arizona State University. Less directly they performed an invaluable service for the children in the study as well as their parents, to other bilingual children and their families -- and to non-bilingual children, too, for in the final analysis child study and understanding have an indivisible quality to which all who know, study, and interpret childhood behavior and learning inevitably contribute. These national consultants were Dr. Edgar Doll, Bellingham (Washington) Public Schools, the late Dr. L. S. Tireman of the University of New Mexico, and Dr. George I. Sanchez of the University of Texas.

Many valuable suggestions and ideas which helped broaden the worth of this study also came from consultants closer to the actual setting. These persons were available for individual and group consultation, and generously gave of their time and professional knowledge:

Dr. Jack Elias, Child Development Center, Phoenix
Mr. Delbert Jerome, formerly of the Arizona State Department of Public Instruction
Dr. Lillian Johnston, Office of the County Superintendent of Schools, Maricopa County, Arizona
Mr. J. Thomas McIntire, Arizona Children's Colony
Dr. Orpha McPherson, U. S. Indian Service
Dr. Nora Ryan, child psychologist
Mrs. Mamie Sizemore, Arizona State Department of Public Instruction

Another group to whom great credit must be given is the large number of community persons with their knowledge of these children and their families, community history, and community organizations, institutions, and services.

Their number is too lengthy to be listed in detail, but their contribution must be recognized in the richness is often added to cold statistics and limited insights, tabulations, numbers, and unadorned test results.

Within the staff of Arizona State University we will merely point out the participants in this study. Their primary responsibility is also listed, but it in no way tells the entire story of innumerable meetings, individual sections of the final product written and re-written by all or nearly all of the persons mentioned below, or the large segment of three full years in the life of each devoted to this research and to the hoped-for product -- a better education for bilingual children wherever they are. This staff learned much about 1) the significant contribution that a competent social worker can make to a study that is basically in the educational realm, 2) the full meaning of cooperation in its day-to-day performance toward completing a complex task, and 3) the strong contributions that can be made by administrative personnel on the basis of their insight and knowledge.

Dr. G. D. McGrath -- Project Director
Dr. H. D. Richardson -- Staff Consultant
Dr. Willard Abraham -- Research Coordinator
Dr. J. J. Jelinek -- Research Assistant; Related Research
Dr. Robert Heimann -- Statistical Consultant
Dr. John Barnes -- Staff Consultant; Community Study
Mrs. Mayola Miltenberger -- Social Worker; Case Studies; Community Study
Mrs. Marge Ralston -- Secretary

Staff members for a segment of the study, each contributing in the special area of his or her abilities, were the following:

Dr. G. C Helmstadter -- Statistical Consultant
Mr. Charles Bernardoni -- Psychometrist
Mr. Lawrence Cummings -- Psychometrist
Mrs. Gloria McConkey -- Psychometrist

The mechanics of meeting a deadline and putting together a final product that lets others know what we have attempted here are an integral part of the contribution made by Mrs. Arlene Dublin and her staff in the mimeograph office.

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CHAPTER I

THE PROBLEM AND SIGNIFICANCE OF THE STUDY

The more important aspects of the problem and the significance of this study entitled, "Investigation of Mental Retardation and Pseudo Mental Retardation in Relation to Bilingual and Sub-Cultural Factors," will include (a) general background for the study, (b) the statement of the problem, (c) the definition of the problem, (d) the importance and value of the study, and (e) the basic plan for reporting the study.

General Background for the Study

Many bilingual children are assumed to have mental limitations which are the result of language, cultural and socio-economic factors. These factors are often assumed to serve as restrictions to the quality of their experiences and to their effective learning capacities. The apparent limitations of children who are bilingual or even tri-lingual may be recognized as a type of pseudo mental retardation. It is highly probable that some educational programs are not appropriate for these children inasmuch as their school records may include data which inaccurately reflect their actual potentialities. It is entirely possible that limiting factors do not necessarily affect adversely the learning potential of bilingual children.

However, if bilingual children are handicapped by assumptions of limitations, there is need to explore carefully the nature of these children. To do less would be to mitigate against two of the most fundamental tenets of American public education--tenets which have had the most to do with making American public education great. These are: (1) the highest quality of education should be provided for all youth, and (2) the task of the schools is to help each child reach his greatest potentiality. These will be referred to later in this chapter.

Basic assumptions leading to the study. There are many basic assumptions or possible hypotheses which have served as encouragement to undertake a study of pseudo mental retardation of bilingual children. Much has been written which purports to examine bilingualism and its problems. Very little has been done which reflects the possibility that mental retardation of bilinguals may be pseudo or spurious. In fact, assumptions have been expressed that the bilingual child may possess unusual abilities, demonstrated by the observation that he has been able to develop facility in use of two or more languages, probably under adverse learning conditions, and under states of emotional duress.

A sizeable backlog of hypotheses, not necessarily to be tested in the study, but which existed in the thinking of the investigators, and which had accumulated over a period of years, prompted them to undertake this investigation. Among the more prominent hypotheses were the following:

1. There is some reluctance to encourage learning English as a second language in many homes as a result of devotion to a "mother tongue" on the part of parents.

2. There is confusion about learning English as a second language in many homes as a result of a feeling that learning English involves obligations of citizenship and participation in a democracy.

3. The manner in which English is learned influences the degree of bilingualism exhibited by children.

4. The degree to which English is learned influences reaction and behavioral attitudes in the learning situations.

5. The age at which English is learned influences the degree of bilingualism evidenced by children.

6. The manner in which and the degree to which any language other than English is learned influence behavioral attitudes in the learning situation.

7. The age, competency level and the manner in which English and/or a foreign language are learned by playmates, parents, siblings and other relatives influence the degree of bilingualism exhibited by children.

8. Bilingual children have a latent potential for learning which may lie dormant as a result of a "complex" growing out of false feelings of inadequacy.

9. Contact with a foreign language via letters, written or received, books and other printed media, radio and television, motion pictures, church, recreation activities and various organizations influences the degree of bilingualism exhibited by children.

10. The facility with which the child speaks, understands, reads and writes English and other language influences the degree of bilingualism exhibited by the child.

11. The amount of contact with a foreign language in the home, in normal play activities and in other activities on the school playground or away from the school ground, influences the degree of bilingualism exhibited by the child.

12. The attitude of the child and his immediate family toward English and toward a second language influences the degree of bilingualism which he will exhibit.

13. Bilingualism has a pronounced effect on school achievement, test scores, social and emotional adjustment, acculturation, and attitudes and interests.

14. Biculturalness is a product of bilingualism and can be identified and perhaps measured.

15. Acculturation exhibited by the child is influenced by community attitude toward two cultures, the attitude of his family toward two cultures and the acceptance of the child of the cultures in his environment.

16. Biculturalism has a measurable effect upon school achievement, test scores, social and emotional adjustment, acculturation, and attitudes and interests.

17. Socio-economic status has a relationship with the degree of bilingualism exhibited by the child.

18. Socio-economic status has a pronounced effect upon school achievement, test scores, social and emotional adjustment, and attitudes and interests.

19. Bilingualness is commonly associated with low socio-economic status.

20. Biculturalness is commonly associated with low socio-economic status.

21. The degree of bilingualism exhibited correlates with biculturalness exhibited.

22. Much of the pseudo mental retardation of bilinguals is related to the degree of bilingualness, the degree of biculturalness, and the socio-economic level.

Many other hypotheses will occur to those interested in the relationship between bilingual children and their degree of retardation. Public interest in a greater amount of mental retardation among bilinguals, if indeed there is any greater amount of mental retardation, has been demonstrated by much writing in the literature, both professional in nature and for the lay citizenry, and by stimulation of research in this problem by foundations, the United States Office of Education and other supporting agencies. The investigators involved in this study discovered a rich array of speculation, information and conclusion in the literature and in the thinking of those interested in the problem of pseudo mental retardation. An analysis of the interaction of the needs of bilingual children, cultural social realities, the environment of bilingual children and the educational perspective about bilingual children with their possible pseudo mental retardation led to the development of and formed the basis for this study. In addition, a concensus of opinion by a series of consultants indicated that the problem needed attention and that much of value could come from an intensive descriptive treatment of the problem.

Educational encouragement for the study. It has often been assumed that the existence and progress of a society, as they are recognized, are largely dependent upon the quality of education which is in evidence. It is undoubtedly true that the schools, in general, reflect the basic ideals of any society insofar as these are capable of being carried into action. This is particularly true in a democracy, since the worth and dignity of the individual are of prime importance, and primarily through education can these be enhanced. The refinement of a democracy relies to a large extent upon intelligence in solving problems of human concern. This reliance, too, depends upon the quality of education. The maximum effectiveness for improvement of a society and for widening the area of shared experiences and participation in this society also depends upon the quality of education.

There are several basic tenets which have made American schools great. These same postulates have, through the schools, helped to make America great. However, if any degree of pseudo mental retardation of any group, more especially bilinguals, is permitted to lessen the effectiveness of their education, the schools are not worthy of credit for establishing greatness through these basic tenets. And the brilliant luster of accomplishment through their acceptance, although unique to this nation, becomes materially dimmed. The more important tenets are worth repeating inasmuch as concern for the bilingual child is inevitably associated with them:

1. Education is for all youth.
2. Education is everybody's responsibility.
3. Education has the task of helping each child reach his greatest potentiality.
4. Schools are the agencies of the citizenry whom they serve.
5. Education has the task of transmitting the quality features of the culture which surrounds it to present and future generations.

Modern educational philosophy thus presents a clear challenge to examine educational opportunity and educational quality for all youth, and especially makes clear the need to insure against unreal and unnecessary impediments which might occur. If there is any degree of pseudo mental retardation among bilingual children, this serves as a bold example of unreal and unnecessary impediment. The challenge is to provide access to educational opportunity, uninhibited by spurious assumptions which might impede progress of any special group.

The Statement of the Problem

The problem of this investigation was to collect, to examine and to evaluate pertinent data concerning a sample of bilingual children and to identify factors which appear to be related to mental retardation and/or pseudo mental retardation. Special emphasis and consideration were given to subcultural factors which might contribute to mental or pseudo mental retardation. The evidence was to be collected by using specially developed instruments, interviews, observations and tests, selected especially for this study.

The Definition of the Problem

Scope and limitations. The scope and limitations imposed on the study were as follows:

1. The bilingual children to be studied were limited to those in selected classrooms in a heavily populated area of the Southwest.
2. The bilingual children selected for study were members in classrooms somewhat especially adapted to the needs of these children.
3. The teachers of the classrooms selected for inclusion in the study were chosen on the basis of their willingness to participate and their concern for the bilingual child in his educational development.
4. The locale or habitat of the bilingual children contained sub-cultural and sub-normal economic factors.
5. The grade groups containing the bilingual children to be studied were selected from the primary level (within grades one and two).
6. The study was designed as a descriptive study and was structured as longitudinal in nature.
7. Test data and other information concerning the bilingual children were limited to those assumed to be pertinent in detecting any possible pseudo mental retardation or real mental retardation.
8. The number of children in this study was limited to the enrollment of the classroom groups included in the investigation. (188 at the outset)
9. The approach in this study was via a team or group of investigators.
10. The role of the cooperating teachers was limited to that of serving as general consultants, to transmitting data about the children, and to completing evaluation forms about each child.
11. Carefully selected consultants of national repute were used in developing perspective, as consultants in general, and as evaluators.

Definitions of Terms. The definitions of terms having unique use or connotation for this study were developed as follows:

1. Bilingual: having ability to communicate in two languages.

2. Mental retardation: slower rate of intellectual development or progress of mental abilities.

3. Pseudo mental retardation: unreal slower rate of intellectual development or progress of mental abilities.

4. Sub-cultural factors: cultural factors or facets making less than normal impact on the life of the individual.

5. Bi-culturalness: influenced by or of having facility of reaction within two recognized cultures.

6. Bilingualism: the comparative relationship of varying components of two languages as exhibited by use, expression, inclusion or knowledge.

7. Bi-culturalism: a comparative relationship of the degree to which a person has knowledge of two cultures to which he has been exposed.

8. Socio-economic status: the relative position of a family as measured by social and economic attainments, compared to other families in the country.

9. School-community: the composite of school and community factors or area having impact upon the experiences of those within its ambit.

10. Bi-cultural: having ability to react to two cultures or having impact from experiences produced by two cultures.

11. Spanish-American: dominantly affected by American tradition, mores or heritage, but with Spanish ancestry, partial or total.

12. Mexican-American: dominantly affected by American tradition, mores or heritage, but with Mexican ancestry, partial or total.

The hypotheses inherent in the study. The hypotheses inherent in the study were as follows:

1. Mental retardation is apparent among some bilingual children but often is pseudo rather than real.

2. Pseudo mental retardation is the result of many factors, including socio-economic status, attitudes, family background and others.

3. Bilingual children may, indeed, have higher mental abilities than recorded, as demonstrated by the fact that they have developed some facility with two languages.

4. Typical school programs are not adequately designed to meet the needs of and to bring out the full potential of bilingual children.

5. A descriptive study of bilingual children is defensible on the basis that there is possibility of developing better understanding of the bilingual child to the end that a better educational program can be devised for him.

Educational theory foundational to the study. The educational theory upon which the study was built follows:

1. This investigation was based in part upon the concept that there are many bilingual children in several regions of the nation, and that they may constitute a great underdeveloped human resource. The task of the schools is to capitalize on these human resources by helping them to become happy, well-adjusted participating citizens.

2. In a broader sense, this investigation was based upon modern theories of philosophy of education with a view toward setting the stage for improvement of the bilingual child's status through examination of the factors mitigating against him. The ultimate goal in extension of these theories would be to discover the factors which make for pseudo mental retardation and release the individual to establish a new level of achievement through acceptance of responsibilities as consequences of his acts.

The Importance and Value of the Study

The importance and value of the investigation may be stated in terms of the need for the study, its objectives, the uniqueness of Arizona State University to do the study, and the special nature of the local setting as conducive for developing this type of investigation.

Need for the study. Whenever and wherever there occurs a situation in which any segment or group of children is not realizing the full impact of a good education, there is need to examine possible reasons. Whenever assumptions are made which conclude without sufficient evidence that any segment or group of children is mentally retarded, there is need to explore the bases of the assumptions. More especially, whenever groups of children are labelled as groups having any general characteristics which may, in the course of planned educational experiences, lessen the values of these experiences, there is need to investigate the nature of these characteristics.

Mental retardation, whether real or assumed, is an expression which may adversely affect an individual, if attached to him, throughout life. There is increasing evidence that much of the mental retardation assumed to be characteristic of many children in schools is in reality a pose or an unreal mask with the contributing reasons being lack of challenge, lack of interest, lack of suitable program, and failure in recognition or diagnosis of the child's strengths and weaknesses.

A review of research on bilingual children and on mental retardation increases realization of the problem of pseudo mental retardation. The problem has not been sufficiently recognized, has not been realistically attacked, and has not been adequately explored.

The objectives of the study. The importance of the study is reflected in the major objectives:

1. To analyze and evaluate the pattern of experiences provided the bilingual child in a good on-going elementary school program.

2. To differentiate between true mental deficiency and pseudo mental deficiency as a result of language, cultural and socio-economic limitations.

3. To investigate so-called mental retardation in terms of the criterion of different rates of mental development in a longitudinal study in a selected quasi-constant school situation.

4. To evaluate the effect of present parental attitudes and levels of aspiration for their children as might be reflected in changes in performances of the children.

5. To describe typical learning situations and experiences as a basis for additional comparative studies.

6. To describe the characteristics and informations of selected bilingual children as a basis for additional comparative studies.

7. To examine possible factors pertaining to the bilingual child and his performance in school with special emphasis on cultural and socio-economic factors, facility in use of languages, family background and attitudes, and personal data.

Uniqueness of Arizona State University for Doing the Study. The College of Education at Arizona State University is a recognized leader in teacher education in the entire Southwest. It has distinctive programs for training school personnel for every category. It is the largest fully-programmed and fully-accredited teacher education institution in the Southwest.

Of particular emphasis is the interest in problems of children unique to the Southwest. Much research and several workshops have been conducted on teaching Indian children, migrant (crop-follower) children, exceptional children, mentally retarded children and gifted children. The College of Education has expressed keen interest in expanding its consideration of all of these groups and others through course work and research. Moreover, the College of Education has greatly expanded its field service and research activities in general. It has a dynamic competent faculty, which is producing distinctive contributions through writing, research and service.

The College of Education has a Department of Special Education with course work in all categories of exceptional children. It has a Bureau of Educational Research and Services, a Guidance Center, and a Campus Laboratory Demonstration School, all actively contributing to its total program of research and service. In addition, the University has a reading clinic, a psychological clinic, a testing center, and use of a 704 IBM computer, all available for assistance and collaboration in research and service activities. Several faculty members have been studying bilingual children for a number of years. They have investigated the problems of the bilingual, and are especially concerned about the impact and problems of assumed mental retardation which are the result of language difficulties.

Perhaps the most important factor regarding uniqueness of Arizona State University for doing this study is its location in the Southwest. There is heavy concentration of bi-cultural and bilingual peoples in the general region around Phoenix, Arizona, and provision for the children of these families has long been a problem in educational planning. There are great numbers of Indian children, of children of Spanish or Mexican descent, and of children of several other minority or cultural groups. There has long been concern for the educational welfare of bilingual and migrant children in the region, but virtually no special investigation of their unique problems or their special nature has been made. Thus the region near and in Phoenix constitutes a great laboratory in human relations and for educational planning in connection with problems of the bilingual and the bi-cultural individual.

The Basic Plan for Reporting the Study

The basic plan for the study was developed to provide intensive collection of data about selected bilinguals which would be helpful in study and description of possible pseudo mental retardation as a result of personal and sub-cultural factors affecting their behaviors. A team of investigators spent three years collecting, screening, evaluating and organizing data which might prove useful in drawing conclusions, or which appeared to exert heavy impact on the problem of pseudo retardation of bilingual children.

The basic plan for reporting the study follows:

Chapter I has dealt with the general background for the study. Chapter II includes an exhaustive review of pertinent literature dealing with the subject of this investigation. In Chapter III are presented the methods and techniques used in collecting and obtaining data. Chapter IV describes the children in their communities, while Chapter V considers the children in their educational settings. In Chapter VI are reported selected case studies of children included in the study. Interpretations, conclusions and recommendations growing out of the study complete the presentation.

CHAPTER II

RELATED RESEARCH

In the "investigation of mental retardation and 'pseudo mental retardation' as it pertains to bilingual and sub-cultural factors," 1440 items of related literature were reviewed. These items were classified in terms of their having inherent in them a descriptive, valuational, or literary approach. Briefs were written for each of the items. There were 469 descriptive research studies, 926 valuational research studies, and 45 literary materials.

The descriptive research studies were considered to be those in which the investigator classified, analyzed, and interpreted his data in a given area so that he could develop meanings that would be instrumental in the solution of a scientific problem. Each brief of a descriptive research study included a complete identification of the reference and statements on the problem, procedures, instruments, methods, findings, and/or conclusions of the study that were of particular significance to the present study.

Valuational research studies were considered to be those in which the investigator used information from various research studies in the field and in which he ascertained the meaning of that information by organizing it into large philosophical patterns or syntheses. Each brief of the valuational research studies included a complete identification of the reference and a list of notes of selected information and ideas of particular significance to the present study.

Literary materials were considered to be novels, short stories, poems, and so on. Briefs of these materials were written in the same form used for the valuational research studies.

To identify the source as being descriptive, valuational, or literary in approach, the symbol (D), (V), or (L) was placed at the end of each item of reference in the briefs as well as in the bibliography.

A Review of the Basic Research Studies

The following is a review of those research studies that were considered to be most directly related to the basic problem of the present investigation of mental retardation and pseudo mental retardation in relation to bilingual and sub-cultural factors. Each review identifies those aspects of the problem, procedures, methods, instruments, techniques, findings, conclusions, and/or recommendations of the study most directly related to the problem, prodedures, methods, instruments, techniques, findings, conclusions, and/or recommendations of the present investigation of mental retardation and pseudo mental retardation in relation to bilingual and sub-cultural factors. The reviews are arranged in alphabetical order according to the surname of the investigator, with the surname of the investigator being used as the sidehead for the review itself. This arrangement was used in preference to the various other arrangements sometimes used in reports of research because it was felt necessary (1) to facilitate the reader's use of the extensive bibliography of the present investigation as it relates to this chapter and (2) to provide an adjustable framework that would make it possible for the writer to emphasize in each review those aspects of the study most directly related to the present investigation.

Altus. It was the problem of a study by Altus[1] "to compare the intelligence test patterning of a selective portion of the Mexican-descent bilingual minority to that of a unilingual (English-speaking) sample equated on the basis of age, sex, and performance I.Q."

Groups of dull children, one bilingual and of Mexican descent and the other unilingual and of non-Mexican descent, were equated on the variables of age, sex, and performance I. Q. on the Wechsler Intelligence Scale for Children. All children in the study were enrolled in the schools of Santa Barbara County, California, at some time during the academic years of 1949-1950 and 1950-1951.

Among the findings of Altus were the following-- (1) All verbal subtests show statistically significant differences (.01 level of confidence or better) to exist between the two groups, with the most striking discrepancies on vocabulary, information, and similarities, in that order. Although the bilingual group is thus within the psychometrically retarded range in verbal (English) skills, much of this retardation is apparently a linguistic one and does not reflect what the children could probably have done with training from birth in only one language -- as evidenced more nearly, though of course very imperfectly, by the performance score. (2) The only subtest showing a significant difference between bilinguals and unilinguals on the Performance Scale is Picture Completion. (3) Only six of the bilingual group had higher verbal than performance I.Q.'s, whereas an even half of the unilingual group were in this category.

Altus concluded that "these results might be of value in the differential diagnosis of borderline cases of psychometric mental retardation within a bilingual Mexican-descent population, and might also offer some evidence as to the handicapping influences of bilingualism in this particular minority group."

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[1] Altus, G. T., "W. I. S. C. Patterns of a Selective Sample of Bilingual School Children," The Journal of Genetic Psychology, 83:241-248, December, 1953.

Altus. In his study of the American-Mexican, Altus[2] attempted to determine the linguistic aspects of Mexican culture that have persisted among those American citizens of Mexican ancestry. In so doing he studied records of more than 4,000 functionally illiterate trainees at the Ninth Service Command Special Training Center of the United States Army. On the basis of his study, Altus concluded the following -- (1) All trainees of Mexican ancestry speak Spanish, no matter how many generations their ancestors may have lived on what is now the soil of the United States. (2) "Quite a number are also conversant with Spanish in terms of reading and writing." (3) Some speak no English whatever. A few of this group have attended English-speaking schools but can neither read nor write English although they can read and write Spanish, a language which they have not formally studied in school. (4) The native-born and reared non-English is more maladjusted and less intelligent than the non-English, foreign-born and educated Spanish-speaking trainee. (5) Factors that determine the persistency of the linguistic aspects of Mexican culture include the following: (a) Propinquity, (b) Diet, (c) Religion, (d) Movies, (e) Newspapers, (f) Peers, (g) Minority status

Anastasi and Cordova. Anastasi and Cordova[3] studied the effects of bilingualism upon intelligence test scores. The Cattell Culture Free Intelligence Test, Forms 2A and 2B, was administered to 176 Puerto Rican children in grades six to eight of a parochial school in the Spanish Harlem area of New York City. One half the group received the test instructions in English during the first testing session (Form A) and in Spanish during the second session (Form B); the order of the languages was reversed for the other half of the group. The split-half reliability of Forms A and B in the English and Spanish versions ranged from .84 to .92. Speed played a negligible part in the scores obtained.

An analysis of variance was conducted on 108 of the subjects, including 27 boys and 27 girls in each of two language-order sub-groups. Significant F-ratios were found for two variables, subjects and sessions, and for the interaction of order X sex. The most conspicuous finding was the marked improvement from first to second testing session, regardless of language. Although there was no over-all sex difference in score, the girls performed better when the testing order was Spanish-English, the boys when it was English-Spanish. This order X sex interaction was attributed principally to rapport, the more highly Americanized boys responding more favorably to an initially English-speaking examiner, while the more restricted and less acculturized girls achieved better rapport with an initially Spanish-speaking examiner.

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[2] Altus, William D., "The American Mexican: The Survival of a Culture," The Journal of Social Psychology, 29:211-220, May, 1949.

[3] Anastasi, Anne, and Cordova, F. A., "Some Effects of Bilingualism upon the Intelligence Test Performance of Puerto Rican Children in New York City," Journal of Educational Psychology, 44:1-19, January, 1953.

The over-all performance of the group fell considerably below the test norms established for the Cattell Culture Free Intelligence Test. Among the reasons for the discrepancy are (1) the very low socio-economic level of the Puerto Rican children, (2) their bilingualism which makes them deficient in both languages, (3) their extreme lack of test sophistication, and (4) their poor emotional adjustment to the school situation. Anastasi and Cordova state that, "Insofar as this maladjustment itself appears to have arisen from the children's severe language handicap during their initial school experiences, a solution of the language problem would seem to be a necessary first step for the effective education of migrant Puerto Rican children."

Anastasi and DeJesus. In their study of preschool children Anastasi and DeJesus[4] attempted to determine the language development of a group of New York City Puerto Rican preschool children, as well as to determine their performance on a non-language test.

Measures of language development and Goodenough Draw-A-Man I.Q.'s were obtained on 25 Puerto Rican girls attending day nurseries in New York City's Spanish Harlem, all the subjects being within six months of their fifth birthdays. Comparisons were made with the performance of 50 white and 50 Negro five-year old children. The language sample was recorded in both Spanish and English, according to the language spontaneously employed by the child. However, Spanish was used almost entirely, only about 2 per cent of the words and less than 1 per cent of the sentences being spoken in English.

Although the Puerto Rican sample was inferior to the Negro and white samples in educational and occupational level of parents, the Puerto Rican children did not differ significantly from the white or Negro groups in Draw-A-Man I.Q., and they excelled both white and Negro groups in mean sentence length and in maturity of sentence structure. ("The greater extent of adult contact in the home environment of the Puerto Rican children is suggested as one possible factor to account for their superiority in early linguistic development.")

Arsenian. In his classic study of bilingualism and mental development, Arsenian[5] attempted to determine the following -- (1) What is the relationship between bilingualism and certain social and economic factors? (2) What is the relationship between bilingualism and mental development of children when the "effect" of certain social factors attendant on the bilingual situation is held constant? (3) Do bilingual children suffer "mental confusion"? (4) Is the capacity for symbolic organization hampered by bilingualism?

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[4] Anastasi, Anne, and DeJesus, Cruz, "Language Development and Nonverbal I.Q. of Puerto Rican Preschool Children in New York City," The Journal of Abnormal and Social Psychology, 48:357-366, July, 1953.

[5] Arsenian, Seth, Bilingualism and Mental Development: A Study of the Intelligence and the Social Background of Bilingual Children in New York City, Bureau of Publications, Teachers College, Columbia University, New York, 1937, 164 pp.

The investigation was confined to a study of bilingual children in immigrant families in New York City. There were two main experimental groups in the study -- one group of 1,152 Italian children, another group of 1,196 Jewish children. Two large public schools were selected, both with grades from kindergarten to the eighth grade. Each of the main experimental groups came from one school and one neighborhood. Instruments were administered to 3,090 children in the ungraded classes and in the 4B to 8B grades inclusive.

Bilingualism was considered to be "the possession or use of two languages . . . following five conditions which invariably are present in a bilingual situation" -- (a) "degrees of bilingualism," (b) "degrees of difference between two languages in a bilingual situation," (c) "age when learning the second language," (d) "method of learning," (e) "attitude toward the second language."

The following instruments were used -- (a) Hoffman's "Bilingual Schedule" was used to obtain a measure of bilingual background. (b) The "Sims Score Card" and J. B. Maller's "Character Sketches" were used to measure socio-economic status. (c) A comparison of a child's age and grade location with the modal age for grades in day elementary schools in the city was used to measure age-grade status. (d) The "Pintner Non-Language Test" and the "Spearman Visual Perception Test -- Part I" were used to measure "mental ability."

Three methods were used for the investigation of relationship between (a) bilingualism and mental ability and (b) bilingualism and development. These methods included (a) the correlational method, whereby coefficients of correlation were calculated between the scores on the bilingual background questionnaire and the scores on both of the intelligence tests for each age and group separately, (b) the comparative method -- A, whereby the "low bilingual" children (score from 0 to 6) and the "high bilingual" children (score 18 to 35) were compared with reference to their intelligence, age-grade status, and the number of siblings below age 16 in high school, (c) the comparative method -- B, whereby paired groups of monoglots and bilinguists were compared with reference to intelligence and age-grade status.

The findings of this study included the following: (1) The extent of bilingual background did not vary significantly from age to age for ages 9 to 14 in either the Italian or the Jewish group. (2) The average bilingual score for the Italian children was larger than that for the Jewish children. The initial resistance of the Jewish group to the English language was less. (3) The average bilingual score of children from mixed marriages was very decidedly lower in comparison with the average scores of the other groups. (4) Statistically no significant differences existed between the extent of bilingual background of boys and girls in both the Italian and the Jewish groups. (5) The influence of parents on the extent of bilingual status of their children was shared equally by father and mother. (6) The native and foreign-born Jewish and the mixed racial groups had a higher average and slightly greater variability in socio-economic scores than the native and foreign-born Italian groups. (7) Bilingualism was associated with socio-economic status to the extent of correlation of-.20.

(8) The Italians showed greater school retardation than the Jews. (9) The school retardation of the foreign-born children was much higher than that of the native-born groups. (10) The correlation coefficient between bilingualism and age-grade status was practically zero for the Jewish group, and at least - .20 for the Italian group. (11) The relationship, as expressed by the Pearson product-moment correlation coefficient, between bilingualism and age-grade status for either the Italian or the Jewish group was not changed when the socio-economic status was held constant. (12) Higher socio-economic status of families was accompanied by higher age-grade status of children from those families to the extent of a correlation of .125 to .274. (13) There were no significant differences in intelligence as measured by the Pintner Non-Language Test or the Spearman Visual Perception Test. (14) The curves of mental development from ages 9 to 14 of the two experimental groups on either test were similar to the curves of mental development for these ages generally reported for other groups of children on other intelligence tests. (15) The performances of the Jewish children in these tests was superior to that of the Italian children, this difference being more evident and statistically more significant on the Spearman Test. (16) The relationship between socio-economic status and intelligence measured by the two non-language tests was positive, but very slight, *r* varying from .038 to .140. (17) Practically no relationship -- expressed by the Pearson *r* -- was disclosed between bilingualism and intelligence for each of the five experimental groups separately, and for each age from 9 to 14 within the two main experimental groups. The *r*'s ranged from - .217 to + 1.00. (18) By holding the factor of socio-economic status constant by means of the partial correlation technique, the earlier relationship -- expressed by the Pearson *r* -- between bilingualism and mental ability was not appreciably changed. (19) The relationship -- expressed by Eta -- between bilingualism and intelligence for the total population of the two main experimental groups, slightly higher than *r*, was insignificant. The Etas (corrected) ranged from .042 to .143. (20) No essential difference between the mental development of "low" and "high" bilinguists from age 9 to 14 was disclosed for the two natio-racial groups either separately or combined. (21) The intelligence, expressed by the intelligence quotients of the Pintner Non-Language Test, was practically the same for "low" and "high" bilinguists in the Italian and the Jewish groups separately. (22) No statistically significant difference was disclosed between the age-grade status of "low" and "high" bilingual children within each natio-racial group. (23) "Low" and "high" bilinguists have an equal number of siblings at age 15 or below attending high school. (24) No reliable differences in intelligence or age-grade status were disclosed between two groups of monoglot and bilingual children matched person per person for race, sex, socio-economic status, and age in months.

On the basis of his research, Arsenian concluded, "Bilingualism does not influence -- favorably or unfavorably -- the mental development of bilingual children of ages 9 through 14 in the groups studied."

Arsenian. In another of his studies, Arsenian[6] attempted to determine "the performance of natio-socio groups." He administered the Spearman Visual Perception Test to 1,152 children of Italian parentage and 1,196 children of Jewish parentage. On the basis of his study he concluded that (1) "With the exception of age 9, at every age the average performance of Jewish children is superior to that of Italian children." (2) "The differences between sexes are not statistically significant."

Arthur. Arthur[7] studied the predictive value of the Kuhlmann-Binet Scale for a partially Americanized school population. In a small city where 75 per cent of the population was said to be of foreign birth or parentage, 186 Kuhlmann-Binet I.Q.'s were obtained for children in the kindergarten, first, and second grades. These same children were given Kuhlmann-Anderson tests when they reached the seventh and eighth grades.

Arthur concluded that (1) An examination given by an experienced psychologist to a kindergarten or a Grade I or a Grade II child from a non-English-speaking home can yield a rating with a high degree of reliability and predictive value as measured by achievement on the Kuhlmann-Anderson scale five to seven years later, if the child has had as much as a year in an English-speaking school environment. (2) There is a greater tendency for ratings to increase among children from non-English-speaking homes, than has been found for children of more typically American populations.

Barke. It was the problem of Barke's[8] study to compare the general intelligence of pupils of certain bilingual and monoglot schools in South Wales by means of non-verbal tests.

Three mixed bilingual schools were chosen which were situated not far apart in a mining district of South Wales where Welsh is the dominant language. The social environment of the pupils was of a similar nature in the three schools. The children commonly spoke Welsh at play, and Welsh was the language usually heard in the shops. In answer to a questionnaire 86.2 per cent of the 354 children replied they spoke Welsh at home. To compare with these, two schools (for boys and girls respectively) were selected in a mining district of the same county where English is the dominant language. In these schools there is a compulsory Welsh lesson every day, but English is the medium of instruction in the other lessons. The language of the shops and playgrounds is English. Of the 302 children in this group only 3.4 per cent of the boys and 3.9 per cent of the girls spoke Welsh in the home.

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[6] Arsenian, Seth, "The Spearman Visual Perception Test (Part I) with Pantomine Directions," British Journal of Educational Psychology, 7:287-301, November, 1937.

[7] Arthur, Grace, "The Predictive Value of the Kuhlmann-Binet Scale for a Partially Americanized School Population," The Journal of Applied Psychology, 21:359-364, 1937.

[8] Barke, Ethel M., "A Study of the Comparative Intelligence of Children in Certain Bilingual and Monoglot Schools in South Wales," British Journal of Educational Psychology, 3:237-250, November, 1933.

The tests used in the study were of both the non-verbal and verbal types, including: (1) Non-Language Mental Tests, by Rudolf Pintner. (2) Northumberland Standardized Tests: General Intelligence, 1925 Series, by Cyril Burt.

The findings of the study included the following -- (1) The monoglot schools were clearly superior to the bilingual on the verbal test, but on the non-verbal test a slight advantage rested with the bilingual schools. (2) When the four age-groups were considered separately and the mean mental ages compared, the monoglot schools were superior in each case on the verbal test with an average superiority of .8 of a year, but on the non-verbal test it was the bilingual schools that were superior in each case with an average superiority of .44 of a year. (3) The monoglot boys were found to be superior to the bilingual boys and the monoglot girls to the bilingual girls on the verbal test, but contrariwise on the non-verbal test. (4) The boys were distinctly superior to the girls on the non-verbal test. (5) When the children from each standard tested were ranked for intelligence by their class-teachers, the coefficients of correlation varied from (a) +.154 to +.678 for teachers' estimates and Northumberland I.Q.'s -- average .453, (b) +.106 to +.473 for teachers' estimates and Pintner I.Q.'s -- average .282, and (c) +.114 to +.575 for N.I.Q.'s and P.I.Q.'s -- average for standards, .351; average for age-groups, .408. There was a fair amount of correlation between the teachers' rankings and the Northumberland Test, but the correlations between the same rankings and the Pintner Test, though positive, were low and in most cases insignificant. (6) Measured by non-language mental tests the children of the three bilingual schools in the Welsh-speaking mining district appeared on the whole slightly superior to the children of the same age groups in the two monoglot schools in the English-speaking mining district of the same county.

It was a recommendation of the investigator that under conditions of bilingualism, intelligence tests of a non-verbal nature should be used in preference or in addition to those in which success is conditioned by linguistic ability.

Barke, and Williams. It was the problem of the study by Barke and Williams[9] to determine (1) whether rural bilinguals are inferior to rural monoglots, and (2) whether there is any inferiority in bilingual children that can be attributed to emotional conflict.

The age-range selected was that of the Scottish Mental Survey, 1932, so that advantage could be taken of the established norms. All pupils in the selected schools were from 125 to 137 months. The examinees were bilingual, combined, and monoglot, there being 54 pupils in the first category, 47 in the second, and 100 in the last. The tests used included (1) The 1932 Mental Survey Test of the Scottish Council for Research in Education, (2) Northumberland Standardized Tests: General Intelligence Series, by Cyril Burt, (3) Non-Language Mental Tests, by Rudolf Pintner, (4) Thorndike Test of Word Knowledge, Form A (in Welsh) and Form B.

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[9] Barke, Ethel M., and Williams, D. E. Parry, "A Further Study of the Comparative Intelligence of Children in Certain Bilingual and Monoglot Schools in South Wales," British Journal of Educational Psychology, 8:63-77, February, 1938.

On the basis of their approach, Barke and Williams ascertained that (1) The difference between the bilingual and monoglot groups when measured by a mental test in which no language is used is insignificant. (2) The bilinguals are distinctly inferior to the monoglots when measured by a mental test given in their second language. (3) When the two groups are measured by a mental test given to each in its mother-tongue, the superiority of the monoglot group is even more marked. (4) "The inference is that these bilingual children, drawn from two adjacent schools in a mining district, are unable to do justice to themselves in either language." (5) Success in a verbal mental test is conditioned in a great degree by extent of vocabulary. (6) The bilinguals, neither in mother-tongue nor in their second language, appear to have a vocabulary equal to that of the monoglots. (7) The inferiority of vocabulary when taken in conjunction with the equality of bilinguals and monoglots in a non-verbal mental test accounts in large measure for their inferiority to the monoglots in the two verbal tests. (8) Apart from range of vocabulary and powers of composition, there are other factors connected with language which affect success in a verbal mental test.

Bayley. It was the problem of Bayley's[10] research study to determine the mental growth curves of 48 children through their first 9 years, with regard to their possible relation to certain known factors. She found that (1) Body build is unrelated to intelligence test scores, though there is slight evidence that larger, more physically mature children are a little more likely to be advanced mentally. (2) There is a definite tendency for children in homes of higher socio-economic status, especially those with more highly educated parents, to make above-average scores after two years of age, whereas children whose parents have less education make lower scores. (3) Children who attend nursery school gain no advantage in their test scores after a period of nursery school attendance. (4) There are no generally differentiating circumstances influencing the mental growth of first-born, last-born, or only children, of children with divorced parents, or of children who in infancy were shy in the testing situation. (5) The mental performances of some children seem to be entirely unrelated to their attitudes in the testing situation, though the relationship is positive, and for a number of children fairly marked.

Bere. It was the problem of the study by Bere[11] "to test by experimental methods some of the implications of various interpretations concerning the possibilities of different immigrant groups, for adjustment to American Standards of life."

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[10] Bayley, Nancy, "Factors Influencing the Growth of Intelligence in Young Children," The Thirty-Ninth Yearbook of the National Society of Education, pp. 49-79, Intelligence: Its Nature and Nurture, Part II, Original Studies and Experiments, Public School Publishing Company, Bloomington, Illinois, 1940.

[11] Bere, May, A Comparative Study of the Mental Capacity of Children of Foreign Parentage, Bureau of Publications, Teachers College, Columbia University, New York, 1924, 105 pp.

Her study of three nationality groups -- Italian, Bohemian, and Hebrew -- identifies certain findings which may be summarized as follows:

1. The relative position of the three groups studied, as shown by a psychological study of children of foreign parentage and a social study of their parents -- "This study clearly indicates on the basis of the Stanford-Binet results that while the elimination of intra-group variations as to social status and languages used in the home reduces the differences between nationality groups, it neither eliminates the differences nor changes the relative positions of the groups, who rank as follows: Hebrew, Bohemian, and Italian. Measured by the Pintner-Paterson Performance Tests, the groups rank as follows: Bohemian, Italian, and Hebrew, indicating the importance of using a wide variety of tests for the evaluation of the abilities of groups. It further suggests that the groups vary in the nature as well as in the amount of their abilities. These relative positions are retained when such external factors as occupational status and language differences are eliminated."

2. The extent to which children of foreign parentage approximate norms developed from the measurement of children of American parentage and the possible interpretation of the differences; and the extent to which an analysis of the test results as a whole shows any marked differences for any one nationality group in any one or several directions -- "The Stanford-Binet results indicate that the three groups fall below Terman's 'middle 50 per cent' and show median intelligence quotients below 100, but the extent of their deviation is relative to their nationality. . . A fair evaluation of all the factors involved suggests that the groups may differ in the nature of their abilities, the Bohemian being more able on tests of a concrete kind, the Hebrew on those of an abstract kind, and the Italian more even in his abilities."

3. The place of language handicap in the interpretation of test results, estimated from a study of the language spoken in the home and length of residence of parents -- "The zero correlation between Stanford-Binet and Pintner-Paterson Performance Test results and average length of residence, plus the rise in Stanford-Binet and Performance mental ages with increased use of English in the home, indicates definitely that these quantitative measures do not support the argument that a language handicap is responsible for low I.Q.'s on the Stanford-Binet tests. These results suggest that individual differences in original nature may determine the extent to which the individual profits, or is handicapped, by his environment. There is a difference between denying the validity of the argument of language handicap as an explanation of differences between groups (since mental differences still exist when the social differences are eliminated) and denying that circumstances affect the status of an individual's development. The circumstances in the home of the child of foreign parentage differ in many ways from those of the child of native parentage. There are the language differences in the homes of all three groups. In addition practically all the Hebrew children and about half the Bohemian children attend 'language schools.' Although the Italian has not this added burden he ranks much lower than the other two groups on the Stanford-Binet -- a fact difficult to explain if we give the main weight to the environment."

4. The relation between social status and the mental rating of the child for different immigrant groups -- "The correlations for the individual tests with occupational status are all positive, although they vary in size for the different groups. They are about as substantial, as correlations, for the same facts for children of native parentage. They indicate then that there is some relation between social status and mental rating."

5. The possibility and the validity of evaluating the immigrant by his occupational and educational status as shown by the correlations of the latter with the mental capacity of the child -- "The fact that the correlations between educational and occupational status and mental rating are not high, plus the fact that the immigrant does not continue in the occupation followed in the country of origin, suggest that these methods are not reliable and might be replaced by the use of group tests, since these can now be given easily and should give more reliable information than a mere statement of fact by the individual."

Berry. It was the problem of the study by Berry[12] to classify intelligence in relation to certain basic factors. He found that (1) The pupils from non-English speaking homes tested lower than those from English-speaking homes. Language difficulty accounts in large part for this difference. (2) Of the pupils from non-English-speaking homes, the Germans tested the highest and the Italians the lowest. (3) The classification of pupils by means of intelligence ratings greatly increased the interest of the teacher in the study of the individual child. (4) It is essential that different methods of instruction be developed for the bright and dull groups. (5) Parents make no serious objection to the classification of their children by means of intelligence tests as soon a they learn that the purpose of this classification is to give the pupil a better opportunity.

Bogardus. Bogardus[13] attempted to ascertain the role of the Mexican in American society. In so doing, he used "new and first-hand materials, such as life histories, interview data, psycho-social analyses." On the basis of his research he concluded the following -- (1) The Mexican in the United States ranges from a broadly cultured person to a low-grade illiterate. (2) There is a basic problem of conflict between Spanish-Americans and Anglo-Americans that arises from religious differences (Catholicism versus Protestantism) and from political differences ("immigrants" versus "natives"). (3) Several thousand Mexican immigrants cross the Border illegally into the United States annually. (4) Racially the great bulk of Mexican immigrants belong to the mestizo, or the mixture of Indian and Spaniard, the Indian elements dominant. (5) Economically, the

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[12] Berry, Charles S., "The Classification by Tests of Intelligence of Ten Thousand First-Grade Pupils," Journal of Educational Research, 6:185-203, October, 1922.

[13] Bogardus, Emory S., The Mexican in the United States, School of Research Studies Number 5, Social Science Series Number 8, University of Southern California, University of Southern California Press, Los Angeles, 1934, 126 pp.

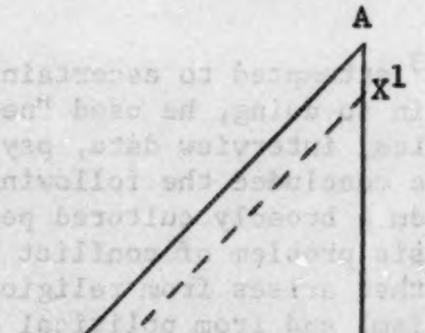
Mexican immigrant has represented the peon or serf on the hacienda -- he has been fashioned into a more or less docile and dependent creature rather than a free and independent person. (6) Religiously, he is partly a product of the nature-worshipping religions of his Indian ancestors and partly a product of Roman Catholic influence. (7) Domestically, his life centers in the family and many children. (8) Politically, his loyalty is extended concretely to the local community, and symbolically, to Mexico as a whole. (9) Personally, he does not find his highest expression in acquiring things or in getting material wealth.

Bossard. It was the problem of Bossard's[14] study to determine "What does the experience of being reared in a home in which one language is spoken, and living subsequently in a society which utilizes another language, do to a person?" (One out of every five white persons living in the United States is reared in a home in which some language other than English was the principal one spoken during the years of early childhood.) Seventeen case documents were used in the study. Some of them were self studies, furnished by bilinguals. The persons studied were all highly intelligent persons, with training in personal and social observation.

Bossard ascertained that there are two basic variables in the study of bilinguals -- (a) the ecological setting, (b) the social attitude toward the other language.

Protective devices of bilinguals he found are: (a) Restrained manner of speaking. (b) Inconspicuous behavior. (c) Home avoidance. (d) Meticulous English.

Graphically, says Bossard, linguistic identification with status is as follows:



a. Let B identify the socially elite form of expression of the dominant group.

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[14] Bossard, James H. S., "The Bilingual as a Person -- Linguistic Identification with Status," American Sociological Review, 10:699-709, December, 1945.

b. Departures from it in a class basis can be marked along the line AB, while bilingual vestiges can be marked along the line BC in terms of the "other" language group status.

c. Consider the case of Individual X. He speaks a low class or Vulgate English, so that his place on the perpendicular line AB, marked by X^1, is near to A. He is a bilingual, whose other language and minority group status, indicated by X^2 on line BC, is quite near to point C. The line X^1 to X^2 is relatively far removed from B, so that his linguistic identification with status is quite low, measured in both dimensions.

d. Other individuals would vary as either or both points in the status scale differ.

Brameld. It was the problem of Brameld's[15] research study to determine what administrative practices in schools help or hinder the development of good human relations. Policies of seven school systems in cities ranging in population from 80,000 to 1,000,000 were investigated. Also studied were demographic and occupational patterns as well as such factors as community relations, administrative machinery, educational organization, activity programs, and parent-teacher cooperation.

Brameld found that (1) Citizens in all the seven communities express at least some genuine concern over problems of minority groups. (2) Explicit intercultural practices and policies are roughly comparable to the status of the school systems when surveyed as a whole. Administrative policy ranges from direct, forthright attack upon minority problems, through "a twilight zone of uncertainty," to an opposite policy almost completely opposed to direct attack of any kind.

On the basis of his study, Brameld concluded that where peoples of various cultures and races freely and genuinely associate, there tensions and difficulties, prejudices and confusions dissolve; where they do not associate, where they are isolated from one another, there prejudice and conflict grow like a disease.

Brigham. In his study of American intelligence Brigham[16] found that (1) "The Nordics are all over the world, . . . rulers, organizers and aristocrats in sharp contrast to the essentially peasant and democratic character of the Alpines." (2) "The Nordic race is domineering, individualistic, self-reliant, and jealous of their personal freedom both in political and religious systems." (3) "The Nordic type is superior to the Alpine." (4) "Our study of the army tests of foreign born individuals has pointed at every step to the conclusion that the average intelligence of our immigrants is declining."

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[15] Brameld, Theodore, Minority Problems in the Public Schools: A Study of Administrative Policies and Practices in Seven School Systems, Harper and Brothers, New York, 1946, 264 pp.

[16] Brigham, C. C., A Study of American Intelligence, Princeton University Press, Princeton, New Jersey, 1932, 210 pp.

Broom. In another of her studies Broom[17] attempted to determine whether there is "enough difference in reading comprehension as measured by a standardized test among boys and girls and also among Anglo-American and Spanish-American pupils in upper elementary grades to justify separating either the sex groups or the racial groups for purposes of instruction, or to justify the development of different curricula and the use of different teaching methods or to justify judging the results of reading teaching by different standards?"

The test used in this study was the El Paso Silent Reading Test. Form I of this instrument was used in September, 1938; Form II, in May, 1939. The tests were given in grades five to eight inclusive, although not all classes were tested in either instance. A total of 9,276 pupil responses to the test were used in the study.

In her research Broom found that (1) The evidence does not indicate the existence of a statistically significant difference in reading comprehension, although the girls are favored over boys in the eight half-grade groups. (2) The data show clearly that the Anglo-American students have a decided average advantage in reading comprehension over Spanish-American students in the same grade level. This is true in all grades. (3) Reading comprehension achievement among the Anglo-American pupils is more heterogeneous than among the Spanish-American pupils. (4) On the basis of an error-analysis technique with 1,200 pupils' responses to the reading test, results showed that word meaning deficiencies and inability to organize what has been read, together cause as many errors in comprehension as do all other variables combined. Furthermore, the errors of Spanish-American pupils in these two phases of reading comprehension exceed the errors of Anglo-American by 15.2 per cent and 19.8 per cent, whereas the errors made by Spanish-American pupils on other aspects of reading comprehension exceed those made by Anglo-American pupils by from 3.4 per cent to 8.4 per cent, with a median of 6.9 per cent.

Broom. One of Broom's[18] early studies in the field was conducted to identify "present sex and race differences discovered by mental tests." The Miller Mental Ability Test, the McCall Multimental Scale, and the Henmon-Nelson Test of Mental Ability were administered in the El Paso Public Schools. The groupings of the pupils included three race groups -- Anglo-American, Spanish-American, and Negro pupils -- and two sex groups.

In her interpretation of her research, Broom stated, "While sex differences are not discovered by the three mental tests used, definite race differences do exist. These may be differences affecting racial groups, rather than innate race differences. Language handicap and differences in educational opportunity during depression years both detracted from the 'equal opportunity to learn,' affecting the Spanish-American group more than the Anglo-American group and tending to lower scores of individuals in the former group yielded by the mental tests. Regardless of the causes of the differences discovered, or of their actuality as genuine race differences, the fact that such differences do exist among pupils entering the high schools is of great importance. From a practical standpoint, it is necessary to know the facts in order to provide an adequate educational program adjusted to the needs and abilities of pupils of differing characteristics."

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[17] Broom, M. Eustace, "A Study of Race and Sex Differences in Reading Comprehension," Journal of Educational Research, 34:587-593, April, 1941.

[18] Broom, M. Eustace, "Sex and Race Differences Discovered by Certain Mental Tests," El Paso School Standard, 16:29-32, November, 1938.

Brouillette et al. It was the problem of the study by Brouillette[19] and his colleagues to determine the following -- (1) Is there a need for a modification of the procedure currently used in the Louisiana schools in teaching French-speaking beginners to read English? (2) Do the results of objective standardized tests, given after the procedures outlined have been in use for one year with French-speaking beginners, indicate that these procedures render more effective the method currently used in teaching beginning reading in the Louisiana schools?

On the basis of their study the investigators concluded that (1) French-speaking primary children are lower in achievement than the English-speaking primary children. (2) French-speaking children are older than the English-speaking children in grades one, two, and three. (3) French-speaking children make slower progress through the primary grades than the English-speaking children. (4) Superintendents and principals believe French-speaking primary children are seriously retarded in comparison with English-speaking children, "because of a language handicap." (5) Experienced primary teachers believe (1) that French-speaking primary children are retarded because of a language handicap; (2) that there is a far greater percentage of failures among French-speaking primary children; (3) that English-speaking children who are promoted are more proficient in reading; and (4) that there should be a modification of the procedure currently used in the schools in teaching beginning reading to French-speaking children. (6) "Primary French-speaking children are lower in achievement than English-speaking children and are seriously retarded."

Brown. Brown[20] designed a study to determine the comparative intelligences of Jewish and Scandinavian kindergarten children.

In this study (1) The selection and distribution of socio-economic levels were based upon the percentage of gainfully employed adults in Minneapolis classified according to the Goodenough-Anderson scale of occupations. (2) Both Jewish and Scandinavian subjects were tested by their teachers during the last semester of the kindergarten year. "Statistical studies of teacher testing reliability produced uniformly satisfactory results." (3) Three hundred and twenty-three (131 males, 192 females) second generation Scandinavian and 324 (178 males, 146 females) second generation Jewish kindergarten children were tested by certified kindergarten teacher-testers on the 1916 Revision of the Stanford-Binet scale.

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[19] Brouillette, J. Walter; Foote, Irving P.; Robert, Edward Bane; and Terrebonne, Linus P., A Comparative Study of the School Progress of Foreign-Speaking and English-Speaking Children in the Early Elementary Grades: Based on Experiments in Certain Communities in Louisiana, Scott, Forsman, New York, 1928, 64 pp.

[20] Brown, Fred, "A Comparative Study of the Intelligence of Jewish and Scandinavian Kindergarten Children," The Journal of Genetic Psychology, 64:67-92, March, 1944.

The following conclusions were established by Brown -- (1) Comparisons of Jewish and Scandinavian kindergarten children yielded consistently negative results with regard to general intelligence -- "No differences in general mental level are present when socio-economic status is controlled and matched in terms of the occupational distribution found in the community from which the sample is taken." (2) Variation among occupational levels is greater for each of the four groups studied than the variation within individual occupational levels, the relationship between intelligence and occupation being quite marked. (3) "Variances of all groups within levels are homogeneous." (4) "There is a general tendency for extreme levels to be more highly differentiated than adjacent levels." (5) Neither group exceeds the other in general vocabulary score, basal age, or chronological age. (6) Jewish children surpass Scandinavian children on tests which require counting pennies, distinguishing right from left, comprehension, naming coins, giving the date, and repeating four digits backwards. (7) Scandinavian children surpass Jewish children in drawing a square, copying a diamond, solving a test of patience, and the ball on the field test. (8) Scandinavian males surpass Jewish males and Scandinavian females surpass Jewish females on tests of motor coordination and patience. Jewish females surpass Scandinavian females on tests of spatial and temporal orientation, rote memory, and language comprehension. Jewish males surpass Scandinavian females on verbal-experimental items, while Scandinavian females surpass Jewish males on tests of motor coordination. Jewish girls are superior to Scandinavian boys on similar tests with the exception of patience. (9) "A decrease in the number of statistically unreliable but consistent differences between the two groups becomes apparent as one passes from lower to upper socio-economic levels." (10) "Differences revealed by this study are present at an early age and appear to be explainable in terms of cultural influence . . ."

Burt. It was the problem of Burt's[21] study to present a provisional set of practical scales for measuring intellectual ability and educational attainments. He found that numerous factors affect the measurement of a child's intelligence: "Sex influences it but little; social status rather more; educational, and particularly linguistic, attainments more profoundly than any other factor measurable with exactitude; while qualitative conditions, such as temperament and emotional attitude, affect it in a degree that is too variable to fix and too elusive to define. Among delinquents, indeed, paucity of educational attainments and peculiarities of emotional attitude will debase their performances and impoverish their replies to a degree that may be gravely deceptive; and, unless duly discounted, may engender an unwarrantable suspicion that the bulk of them are mentally defective."

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[21] Burt, Cyril, Mental and Scholastic Tests, London City Council, P. S. King and Son, Ltd., London, 1921, 430 pp.

Caldwell and Mowry. In another of their investigations Caldwell and Mowry[22] studied sex differences in school achievement among Spanish-American and Anglo-American children. A total of 340 Spanish-American and 223 Anglo-American children were studied, and 4,646 tests of both the objective type and essay type were administered.

The investigators concluded that (1) Whereas the Anglo-American girls exceed the boys in numbers enrolled in school by 16.03 per cent, the Spanish-American boys exceed the Spanish-American girls by 23.03 per cent. "This fact would indicate a difference in social values placed upon education by the two racial groups concerned." (2) Although the critical ratios indicate that there are no sex differences sufficiently large to be considered statistically significant, there are certain tendencies which may indicate (a) that Anglo-American girls earn slightly higher scores on essay tests than Anglo-American boys, (b) that Spanish-American boys earn a slightly higher score on the essay tests than Spanish-American girls.

Caldwell and Mowry. In still another study Caldwell and Mowry[23] attempted to determine (1) whether teachers' grades assigned to bilingual children are as fair criteria of school achievement as grades assigned to English-speaking children, and (2) whether there is a tendency for teachers to grade bilingual children consistently lower than knowledge of subject matter would justify. A total of 167 Anglo-Americans and 216 Spanish-Americans were tested in English while 133 Anglo-Americans and 196 Spanish-Americans were tested in the field of history. It was concluded that there is a constant bias or a definite "halo" effect in evidence: Spanish-American children are being graded consistently lower than their actual knowledge of subject matter justifies.

Caldwell and Mowry. A study by Caldwell and Mowry[24] to determine whether the use of new-type tests increases or decreases the language handicap of Spanish speaking children. A total of 623 children were tested in the fields of English and History. Each objective test was accompanied by a test of the essay type over the same material, and in each case it was possible for a pupil to score an equal number of points on the two.

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[22] Caldwell, Floyd F., and Mowry, Mary Davis, "Sex Differences in School Achievement among Spanish-American and Anglo-American Children," *The Journal of Educational Sociology*, 8:168-173, May, 1935.

[23] Caldwell, Floyd F., and Mowry, Mary Davis, "Teachers' Grades as Criteria of Achievement of Bi-Lingual Children," *The Journal of Applied Psychology*, 18:288-292, April, 1934.

[24] Caldwell, Floyd F., and Mowry, Mary Davis, "The Essay Versus the Objective Examination as Measures of the Achievement of Bilingual Children," *The Journal of Educational Psychology*, 24:696-702, December, 1933.

The investigators concluded that (1) Language difficulty operates to penalize the Spanish-American pupils when either the objective or the essay type of examination is used as an instrument of measurement. (2) There is considerably more of a handicap experienced with the essay than with the objective type. (3) There is a greater handicap experienced by the Spanish-American children when tests are given in History than when they are given in English. (4) When there are such large differences existing between the results obtained on the objective and the essay types of examinations and when evidence points to the fact that this difference is largely due to language handicap, there seems to be a strong probability that the same factor may account for the relatively low standing of Spanish-speaking children on the so-called intelligence tests.

Callicutt. It was the problem of the study by Callicutt[25] to present a technique for constructing vocabulary and comprehension tests of parallel content and difficulty in English and Spanish, to present materials developed in two trial editions of tests, and to evaluate them in terms of the results of their administration to public school children in Mexico and in the United States. Two editions of tests were presented and details of their administration are included. On the basis of his data Callicutt concluded that (1) The materials selected are adequate for valid tests of vocabulary and comprehension in reading. (2) The tests are suitable for group evaluation, but they lack sufficient reliability for prediction in individual cases. (3) The Spanish and English tests are satisfactorily parallel as to order of difficulty. (4) The words used in the tests are reasonably parallel in frequency of use in English and Spanish. (5) The children's reactions to the primary tests in their various editions indicate they are highly interesting to children in both Mexico and the United States.

Carlson and Henderson. It was the problem of this study by Carlson and Henderson[26] "to ascertain whether any alleged group differences in intelligence between white children of non-Mexican parentage and those of Mexican parentage remain when research conditions are controlled as much as possible."

A control group of 105 white children, both parents of each child having been born in countries other than Mexico, were compared in intelligence over a period of five and one-half years with an experimental group of 115 children, each of whose parents were born in Mexico, attempting to control all known variables that have been demonstrated to be of significance in similar studies -- the urban-rural, socio-economic, education, health, prejudice, motivation, bilingualism.

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[25] Callicutt, L. T., Construction and Evaluation of Parallel Tests of Reading in English and Spanish. Doctor's Dissertation, University of Texas, Austin, Texas, 1942, 442 pp.

[26] Carlson, Hilding B., and Henderson, Norman, "The Intelligence of American Children of Mexican Parentage," Journal of Abnormal and Social Psychology. 45:344-351, July, 1950.

Among the conclusions established by Carlson and Henderson were the following -- (1) The American children of Mexican parentage were found to have consistently lower mean I.Q. scores than the American children of white non-Mexican parentage. (2) The difference between the two groups increased in magnitude from the first to the last testing periods over a span of five and one-half years, primarily because of a drop in mean I.Q. of the children of Mexican parentage. (3) The mean non-language score on mental maturity did not differ markedly for either group from the mean language score.

Carrow. Carrow[27] attempted "to examine the relationship between bilingualism and the mastery of language." Basic to her problem were the following -- (1) How do bilingual children compare to monolingual children in the achievement of language skills: namely, silent reading (vocabulary and comprehension), oral reading (accuracy, comprehension, and rate), hearing vocabulary, spelling, and arithmetic reasoning? (2) How do bilingual children compare to monolingual children in oral language with regard to articulation, verbal output as measured by total number of words used in a unit of time, the extent of speaking vocabulary as measured by the number of different words used, length of clause, complexity of sentence structure, and the number and type of grammatical errors?

The comparison of English language ability and achievement was made between a group of monolingual children and a group of bilingual children who were similar in regard to age, grade, socio-economic status, and intelligence. Four elementary schools in San Antonio, Texas, were selected as sources of subjects for the investigation on the basis of three criteria: the presence in the school of children in both language groups, the similarity of the schools in methods and curricula, and the cooperation of the school authorities.

Carrow established that (1) There was a significant difference between the language groups, in favor of the monolingual group, in the tests of oral reading accuracy, oral reading comprehension, hearing vocabulary, arithmetic reasoning, and speaking vocabulary. (2) No significant difference was found between the language groups in silent reading comprehension, silent reading vocabulary, oral reading rate, spelling, verbal output, length of clause, and degree of subordination. (3) The bilingual group made more and different types of articulatory and grammatical errors than the monolingual group. (4) The boys did not differ significantly from the girls in any of the measures of language functioning except that of oral reading rate, in which the girls were superior.

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[27] Carrow, Sister Mary Arthur, "Linguistic Functioning of Bilingual and Monolingual Children," *The Journal of Speech and Hearing Disorders*. 22:371-380, September, 1957.

Chauncey. It was the problem of Chauncey's[28] study to determine the relationship between the home factor and such other factors as the achievement and intelligence of school children. Data were obtained on the significance of the rating of home, as measured by the Sim's Score Card, in relation to school achievement, as measured by the Stanford Achievement Test. Date were also obtained on the relation between the home factor and mental level, as measured by the McCall Multimental Scale. The groups studied were an eighth grade group of 113 pupils and a ninth grade group of 130 pupils at Junior High School, Stillwater, Oklahoma. Chauncey concluded that (1) "The value of the association for home status and school achievement, while significant, is relatively low." (2) "While a certain pupil rates low in home status, his school achievement may be satisfactory." (3) "While a certain pupil rates high in home status, his achievement may be mediocre or low."

Cook. It was the problem of this study by Cook[29] to determine the intelligence quotients of Mexican children. The median mental age on the Point Scale of Performance Tests was 11 years and 10 months. The median mental age on the Binet was nine years and six months. Cook concluded that educational and vocational guidance should be based upon results from non-verbal intelligence scales as well as upon the more commonly used verbal scales.

Cordova. It was the problem of the research study by Cordova[30] to investigate the effects of alternate use of Spanish and English instructions on the performance of bilingual Puerto Rican children on a non-verbal, culture-free test.

A group of children in the upper three grades of a parochial school in the Puerto Rican district of New York City was tested with the Cattell Culture Free Test of Intelligence. The subjects were divided into two groups. The first of these received the test instructions in English, the other in Spanish. After an interval of two weeks, the subjects were retested with another form of the scale, this time reversing the language of instructions to the two groups.

Analysis of variance of the test scores indicated the following -- (1) Language produced no significant difference in performance. (2) The group showed a large improvement with practice, the average gain for the group being 5.71 score points. (3) Order of testing showed a differential effect in the two sexes, boys being favored by the order which started with English, while girls excelled when Spanish was used first. The difference in amount of bilingualism of the two sexes was correlated with this result, the boys being more English-speaking than the girls. (4) Compared to the norms given by Cattell, this group fell considerably below average. Their poor mastery of either of the two languages, their low socio-economic level, their poor emotional adjustment to the school situation, and their unfamiliarity with psychological tests are suggested as probable causes of their poor performance. (5) For further testing of this population, elimination of language altogether, or the use of both languages in a single testing, would appear to be more adequate methods than the translation of tests or test instructions.

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[28] Chauncey, Marlin R., "The Relation of the Home Factor to Achievement and Intelligence Test Scores," *Journal of Educational Research*, 20:88-90, September, 1929.

[29] Cook, John Munson, and Arthur, Grace, "Intelligence Ratings for 97 Mexican Children in St. Paul, Minnesota," *Exceptional Children*, 18:14-15, October, 1951.

[30] Cordova, Fernando A., *A Comparison of the Performance of a Bilingual Group on a "Culture Free" Test Administered in English and Spanish*. Doctor's Dissertation, Fordham University, New York, 1951, 59 pp.

Crump. It was the problem of the investigation by Crump[31] to determine the educability of Indian children of the civilized tribes of Oklahoma. (1) The average I.Q.'s as determined by the tests were Stanford-Binet, 90; Pintner-Paterson, 93; and Goodenough, 92. (2) Of the 250 full blood Indian children of grades 1 through 3 tested fifteen were found whose Stanford-Binet I.Q.'s were 130 or above. (3) There is as wide a variation in intelligence levels among Indian children as there is among white children -- "all the way from positive feeble-mindedness to genius level."

Darcy. In one of the basic studies in the field, Darcy[32] tried to determine the performance of bilingual Puerto Rican children on verbal and non-language tests of intelligence: (1) Is there a significant difference between I.Q. achieved on the Pintner General Ability Test, Verbal Series, Intermediate Test, Form B, and the mean I.Q. achieved on the Pintner General Ability Test, Non-Language Series, Form K, when these tests are administered to a selected bilingual Puerto Rican Population in grades five and six of two elementary schools in New York City? (2) Is there a significant difference in the mean mental ages of these subjects when their intelligence is measured by the Pintner Verbal Test and the Pintner Non-Language Test? (3) To what extent can a reliable non-language test of intelligence such as the Pintner Non-Language Test be substituted for the Pintner Verbal Test when measuring the intelligence of this population?

The subjects of the investigation were 235 children, 117 boys and 118 girls, of Puerto Rican parentage, who, at the time of the investigation were in grades 5 and 6 in two public elementary schools in New York City. The age range of the subjects was from 124 months to 178 months. These children were selected because of their bilingual background. The information relating to the language which was spoken in the home was obtained by the teacher of the children from cumulative records and the administrators of the tests corroborated this information by having each child indicate on his test papers the language spoken in the home. All the subjects heard and spoke Spanish at home, whereas they heard and spoke English at school.

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[31] Crump, Bonnie Lela, The Educability of Indian Children in Reservation Schools, Southeastern State Teachers College, Durant, Oklahoma, 1932, 58 pp.

[32] Darcy, Natalie T., "The Performance of Bilingual Puerto Rican Children on Verbal and Non-Language Tests of Intelligence," Journal of Educational Research. 45:499-506, March, 1952.

The following instruments were used -- (1) The Pintner General Ability, Verbal Series, Intermediate Test, Form B, was used as the verbal means of measuring intelligence. (2) The Pintner General Ability Test, Non-Language Series, Form K, was used as the non-verbal means of measurement.

The findings included the following:

1. The mean I.Q. of 87.84 with a standard deviation of 16.52 which was achieved by the 235 subjects on the Pintner Non-Language Test, was significantly higher than the mean I.Q. of 79.56 with a standard deviation of 14.31 which was achieved on the Pintner Verbal Test. The obtained difference between these mean I.Q.'s was 8.28 in favor of the Pintner Non-Language Test and the critical ratio was found to be 5.81.

2. The mean mental age of 126.54 months with a standard deviation of 30.11 which was achieved on the Pintner Non-Language Test by the 235 subjects was significantly higher than the mean mental age of 117.92 months with a standard deviation of 16.49 which was achieved on the Pintner Verbal Test. The obtained difference between these mean mental ages was 8.62 in favor of the Pintner Non-Language Test and the critical ratio was found to be 3.85.

3. The Pearson coefficient of correlation between I.Q.'s achieved on the Pintner Verbal Test and on the Pintner Non-Language Test was .58 with a PE_r of .03, and the Pearson coefficient of correlation between the mental ages achieved on the Pintner Verbal Test and the Pintner Non-Language Test was .42 with a PE_r of .04.

The conclusions of this study were as follows -- (1) Verbal and Non-Verbal Tests measure the same functions to a fairly large extent, but not so great an extent as to warrant the substitution of one test for another. (2) The administration of intelligence tests of both the verbal and the non-verbal types yield a more valid picture of the intelligence of a bilingual population than the administration of either a verbal test of intelligence or a non-language test of intelligence as the sole means of intelligence measurement.

Davenport. It was the problem of Davenport's[33] study to compare Mexican and non-Mexican siblings in the first three grades of the elementary school by way of intelligence quotients. Davenport found (1) The correlation between the I.Q.'s of the Mexican siblings was .25, while that of the non-Mexican siblings was .31. (2) The difference between the mean I.Q.'s of the older and the younger siblings in the two language groups suggests that the older Mexican siblings had gained in I.Q. since school entrance. He concluded that prognosis on the basis of the Goodenough I.Q. at school entrance is likely to underestimate the future abilities of the Mexican child.

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[33] Davenport, E. Lee, "The Intelligence Quotients of Mexican and Non-Mexican Siblings," *School and Society*, 36:304-306, September 3, 1932

Eaton. It was the problem of this study by Eaton[34] to correlate the first six thousand entries in English, French, German, and Spanish frequency lists and thus to contrive a basic tool in ascertaining a basic vocabulary.

The source lists used in the four languages were as follows -- (1) The Thorndike *Teacher's Word Book of 20,000 Words*. (2) *The French Word Book* of 6,067 words. (3) The *Haufigkeitsworterbuch der Deutschen Sprache* of 79,716 words. (4) The *Graded Spanish Word Book* of 6,702 words.

The 6474 concepts contained in the list are arranged on a scale of descending frequency, as determined by their frequency position in the four individual languages examined. The correlated concepts are divided into seven units of diminishing frequency -- the first six units containing approximately 1000 entries each and the seventh group approximately 500.

According to Eaton, (1) The List will serve as a means of ascertaining a basic vocabulary for *any* language. Also, the List will be of use to textbook makers, vocabulary-test makers, and compilers of small bilingual dictionaries by guiding them in their selection of the meanings of words on a basis of actual frequency.

Foshay and Wann. It was the problem of this study by Foshay and Wann[35] to determine the social values of children.

The study was conducted in Springfield, Missouri, by teachers in six elementary schools and a group of teachers in the high school, the elementary supervisor and the curriculum director of the Springfield schools, and three members of the staff of the Horace Mann -- Lincoln Institute of School Experimentation who served as research consultants.

On the basis of their research Foshay and Wann established the following -- (1) There was little or no relationship between verbal participation in classroom planning and the tendency of individual children to follow through on such planning. (2) In every case the child who rated high in group acceptance was also high in follow-through. In every case the child who rated low in group acceptance was also low in follow-through. (3) The interaction between the investigators and the children was a powerful force in helping the children to be self-governing individuals, at least so far as classroom behavior is concerned. (4) Inconsiderate behavior tended to be directed downward in the scale of group acceptance. (5) "Considerateness" and "inconsiderateness" were closely related to group acceptance as probably to be an expression of it. (6) There was no relationship between the economic status of the children's families and their tendency to share things at school. (7) The children were either ignorant of the expectation that they should share things under certain circumstances or they rebelled against the expectation.

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[34] Eaton, Helen S., *Semantic Frequency List for English, French, German, and Spanish: A Correlation of the First Six Thousand Words in Four Single-Language Frequency Lists*, The Committee on Modern Languages of the American Council on Education, The University of Chicago Press, Chicago, Illinois, 1940, 441 pp.

[35] Foshay, Arthur W., and Wann, Kenneth D., *Children's Social Values: An Action Research Study*, Horace Mann -- Lincoln Institute of School Experimentation, Teachers College, Columbia University, New York, 1954,323 pp.

Fritz and Rankin. It was the problem of a study by Fritz and Rankin[36] (1) to determine whether junior high-school pupils from foreign speaking homes are actually handicapped in English and (2) if a handicap exists, to determine its extent, with the elements of English in which the foreign pupils are especially handicapped, and to suggest plans for remedial teaching.

Three standardized tests were given to 201 junior high school pupils of Arma, Kansas: The Otis Self-Administering Test of Mental Ability, Form A; the New Stanford Achievement Test, Form V; and the Sim's Socio-Economic Score Card, Form C. Of the 201 pupils, 52 were in grade seven, 72 in grade eight, and 77 in grade nine. Matchees were placed in groups of "Only English Speaking" and "English-Foreign Speaking."

Fritz and Rankin ascertained the following -- (1) On separate sections of the Nev Stanford Achievement Test the mean scores made by the English pupils usually excel those made by the Foreign pupils. (2) The differences between the mean scores of the two groups is greater on the English sections than on the non-English sections. (3) The Foreign pupils are generally older than the English pupils and might therefore be expected to achieve more instead of less. (4) When a Foreign pupil is matched with an English pupil in order to equalize grade, age, mental ability, and home environment, the English pupils still excel their Foreign mates. (5) English pupils of the matched pairs excelled their Foreign mates by five times as many points on the English sections as on the non-English sections.

In making "plans for remedial teaching of English to foreign pupils" the writers suggest that "the following elements be especially emphasized: correct usages of synonyms and homonyms; case forms of the personal pronouns; verb usages -- form, agreement, and mood; avoidance of redundant expressions and double negatives; choice of appropriate preposition; choice of relative pronoun; and choice of noun to denote intended gender."

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[36] Fritz, Ralph A., and Rankin, Nellie R., "The English Handicap of Junior High-School Pupils from Foreign Speaking Homes, and Remedial Suggestions," Journal of Educational Research, 27:412-421, January, 1934.

Garretson. Garretson[37] attempted to determine, by objective methods, some of the factors which lead to retardation among Mexican public school children. The investigator studied a school system of 314 -- 197 American and 117 Mexican children. He concluded that (1) The Mexican pupil is retarded "10.53 months more than his American classmate." (2) "There are 30.01 per cent more individuals of the Mexican group retarded than of the American group." (3) The Mexican is more irregular in school attendance than is the American pupil. ("The difference is so slight that it is of questionable importance as a factor in the courses of retardation.") (4) ". . . transientness is not an explanation of the greater retardation of the Mexican children." (5) ". . . the verbal tests are about as satisfactory as the non-verbal tests for the purpose of measuring mental ability in Grades III to VIII." (6) The factor of language difficulty operates to the disadvantage of the Mexican in Grades I and II, but is of less importance in Grades III to VIII. (7) ". . . the principal factor governing retardation of the Mexican child is his mental ability as measured by the group test."

Garrett. It was the problem of the study by Garrett[38] to determine if the Indian student in the United States Indian School differs from the Indian student in the public schools, when all varying factors, besides those to be measured, have been held constant. Garrett concluded that (1) The average score of the full bloods in the United States Indian schools begins lower and rises higher and more steadily than that of the full bloods in the public schools. (2) The I.Q.'s, grade for grade, show the mixed bloods of both the United States Indian schools and public schools to be more intelligent than the full bloods of the corresponding school groups. (3) The United States Indian School either has more profound effect on the measured intelligence of the full blood and mixed blood students in their care than do the public schools (there is found to be more improvement), or from the time the students go from the lower grades to the higher grades there has been operative a stronger factor of selection. (4) "The U.S. Indian Schools are doing more toward helping those Indian students who come to them than the public schools."

Garth. Garth[39] studied the relationship of mental abilities of

Garth. Garth[39] studied the relationship of mental abilities of

mixed and full blood Indians on the basis of certain educational experiences. He controlled school training but not the circumstances of social status. His conclusions were as follows -- (1) The mixed blood Indians excel over the full bloods by about 11 per cent in performing tests of higher mental processes. (2) Increased education produces an increase in score in tests of higher mental processes for both blood groups. (3) Probably on account of language difficulty the logical memory test proved the most difficult test for the full bloods. (4) The best scores were about equally divided between the mixed and full blood Indians.

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[37] Garretson, O. K., "A Study of Causes of Retardation among Mexican Children in a Small Public School System in Arizona," The Journal of Educational Psychology, 19:31-40, January, 1928.

[38] Garrett, Thomas R., and Garrett, James E., "A Comparative Study of the Intelligence of Indians in United States Indian Schools and in the Public or Common Schools," School and Society, 27:178-184, February 11, 1928.

[39] Garth, Thomas R., "A Comparison of Mental Abilities of Mixed and Full Blood Indians on a Basis of Education," The Psychological Review, 29:221-236, May, 1922.

Garth. It was the problem of Garth's[40] investigation to obtain a rank order distribution of blood groups according to an accepted scale for the measurement of intelligence. The National Intelligence Test was used for the instrument of measurement. Garth found that (1) The measure of intelligence indicates the following sequence -- first, mixed bloods; second, Mexicans; third, Plains and Southeastern Indians; fourth, Pueblo Indians; fifth, Navajo and Apache Indians. (2) The ratios are respectively 127, 107, 100, 88, 77, using Plains and Southeastern Indians as the base. (3) Estimates of social status indicate the same sequence. (4) The mixed breeds excel the pure breeds in intelligence scores. (5) The scores of those individuals of nomadic tribes excel those of sedentary tribes.

Garth. It was the problem of the study by Garth[41] to ascertain whether or not there are racial differences in native traits of Whites and Indians. The Thorndike Handwriting scale was used in measuring samples of handwriting of Whites and Indians. Garth concluded that (1) The full-bloods are somewhat better in legibility than the mixed-bloods, and the Whites are best of all. (2) The Indians are no more nor less speedy than the Whites. (3) The greatest factor in influencing score in legibility and speed for the Indians is school grade. Age has little significance, and degree of White blood practically no significance. (4) With proper training Indians may compare well with Whites in handwriting.

Garth. Garth[42] designed a study to administer a well-standardized intelligence test to Mexican children who would be fairly representative of Mexicans in the United States of a sufficiently large group to make the results significant. In his study Garth established the following -- (1) The NIT-IQ for a large group taken at random is 78.1 with considerable variability -- the Q being 22.6 I.Q. (2) The boys and girls have the same

variability -- the Q being 22.6 I.Q. (2) The boys and girls have the same

median I.Q. (3) The NIT-IQ increases with school grade, but not in regular steps. (4) The median score for each school grade increases with the grade and the mental age equivalent for it indicates that these Mexican children are on the average 1.1 years mentally younger than the white for the corresponding school grades. (5) The influence of the school grade on the score is high if age is disregarded. (6) The influence of the age on the score when school grade is held constant is negligible. (7) The retardation of the Mexican children is very high, 80.5 per cent on the average, being higher in the lower grades than in the upper grades, the boys being on the average more retarded than the girls.

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[40] Garth, Thomas R., "A Comparison of the Intelligence of Mexican Children and Mixed and Full-Blooded Indian Children," *Psychological Review*, 30:388-401, September, 1923.

[41] Garth, Thomas R., "The Handwriting of Indians," *The Journal of Educational Psychology*, 22:705-709, December, 1931.

[42] Garth, Thomas R., "The Intelligence of Mexican School Children," *School and Society*, 27:791-794, June 30, 1928.

Garth. It was the problem of the study by Garth and Barnard[43] (1) to obtain measures of full-blood Indians for the various tests of the Group Will-Temperament Test, and (2) to compare these with similar measures of white individuals so as to determine if the groups behave differently when so tested. They established the following conclusions: (1) Whites possess stronger personalities than Indians. (2) They are "more speedy in the test than are Indians." (3) They are quicker in making decisions. (4) They are more self-confident. (5) They have less motor inhibition. (6) They have better coordination of impulses. (7) They are poorer in volitional perseveration. (8) The greatest difference between the races are in speed of movement, speed of decision, coordination of impulses and perseveration. In only the last does the Indian excel. (9) "It would appear that Indians are less speedy in decision than are the Negroes and they appear to be more given to motor inhibition than the Negroes."

Garth and Johnson. It was the problem of the study by Garth and Johnson[44] to find the following -- (1) What is the influence, as measured, of educational achievement upon the intelligence score of Mexican children? (2) What is the indicated mental and educational growth of Mexican children? (3) What is their educational retardation? (4) What is their mental age for a school grade? (5) What is the educational age for the same school grade? (6) What are the I.Q.'s, E.Q.'s, and A.R.'s (accomplishment ratios) of Mexican children?

The subjects of the study were 683 Mexican children, 440 of whom were from small towns and rural schools in New Mexico. The boys and girls were about equally divided, their numbers being, respectively, 338 and 345. The ages ranged from 6 to 18 years and the grades from 4 to 9. The majority of the children came from homes where the standard of living was low and shiftlessness prevailed. The test administered to the subjects was the Otis Classification Test, which is composed of an educational test (Part I) and an Intelligence Test (Part II).

Among the findings of the investigators were the following -- (1) "The Mexican child is more like the American white at the early ages, but less like them as they grow older." (2) The chronological age for a grade is high and the educational retardation is high (68.8 per cent). (3) The mental and educational ages for a grade are below the American white norms, but the educational age is slightly above the mental age for a grade. (4) The Otis and Terman group I.Q.'s are, for the group, respectively 83.02 and 79.6. (5) The median E.Q. is higher than the median I.Q. (6) The A.R. indicates that on the whole the ratio between the I.Q. and the E.Q. is higher than it is for the American white. (7) The highest correlation is found between intelligence and achievement -- .80; the next is between intelligence and school grade -- .56. (8) The multiple correlation between intelligence and the factors of school placement and educational achievement is .58. (9) "The relative weights assigned to school placement and achievement are 1 and 3.7, showing that the latter is the more influential in obtaining an intelligence score."

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[43] Garth, Thomas R., and Barnard, Mary A., "The Will-Temperament of Indians," Journal of Applied Psychology, 11:512-518, December, 1927.

[44] Garth, Thomas, and Johnson, Harper D., "The Intelligence and Achievement of Mexican Children in the United States," The Journal of Abnormal and Social Psychology, 29:222-229, July-September, 1934.

Garth and Smith. It was the purpose of this study by Garth and Smith[45] to do the following -- (1) To obtain a measure of the performances of full-blood Indians on a non-language intelligence test, with a comparison of their performances on a language, or verbal, intelligence test. (2) To note the influence of education on both tests.

The Pintner Non-Language Mental Test and the Otis Classification Test were used in the study. The subjects in the study were pupils attending the Santa Fe and Albuquerque United States Indian Schools.

The investigators established the following conclusions -- (1) Age for age, grade for grade, the Indian children show a performance on the Pintner Test more nearly equal to white performance than they do on the verbal test. (2) I.Q.'s for the Pintner Test, while inferior to that of white performance, are from 10 to 14 points higher than I.Q.'s from the verbal test.

Garth, Elson, and Morton. The basic problem of the study by Garth, Elson, and Morton[46] was as follows -- (1) To secure a satisfactory measure of intelligence of Mexican children with a reliable non-language test in a city environment of the United States. (2) To ascertain what the same children would do when tested with a verbal test and with an educational achievement test. (3) To determine what influence language and education have on such children when their ability with a non-language intelligence test is known.

There were 455 Mexican children tested who were taken as they were found from the fourth to the eighth grades, their ages ranged from eight to sixteen years. The study was conducted in Los Angeles. The tests used in the study were the Pintner Non-Language Intelligence Test and the Otis Classification Test, which tests both intelligence and achievement.

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[45] Garth, Thomas R., and Smith, Owen D., "The Performances of Full-Blood Indians on Language and Non-Language Intelligence Tests," Journal of Abnormal and Social Psychology, 32:376-381, October-December, 1937.

[46] Garth, Thomas R.; Elson, Thomas H.; and Morton, Margaret M., "The Administration of Non-Language Intelligence Tests to Mexicans," The Journal of Abnormal and Social Psychology, 31:53-58, April, 1936.

The investigators established the following conclusions -- (1) Age for age, grade for grade, the Mexican children are inferior to American whites in verbal test results. (2) In the non-language test results the Mexicans are practically equal in performance to the American whites. (3) I.Q.'s derived from the non-language tests are on the whole about equal to the American white I.Q., though the verbal test I.Q. is, for the total group of Mexicans 79.5. ("This last figure has often before been obtained for Mexicans.") (4) "Verbal tests are unfair to Mexican children if we grant that both tests really test intelligence."

Garth, Holcomb, and Gesche. In their study on mental fatigue, Garth, Holcomb, and Gesche[47] attempted to do the following -- (1) To set a situation of continuous performance during a period of work and to sample the efficiency of the workers -- Mexican children -- at periods of two minutes each in order to see what fluctuations occur in the work curve and particularly to ascertain if there is a falling off in performance at the end of the period. (2) To bring the results into comparison with a similar performance of white children. On the basis of their study the investigators concluded that race is not the determining factor related to individual differences in mental fatigue of children.

Goodenough. It was the problem of Goodenough's[48] study to determine racial differences in intelligence by way of a non-language intelligence test. The Goodenough Intelligence Test was administered to 2,457 public school children "in whose immediate ancestry a number of racial stocks are represented." It was found that (1) Children of different racial groups differ greatly in their performance on a primary group-test designed to measure intellectual capacity -- the Goodenough Intelligence Test. (2) Since the test is entirely non-verbal, these differences can not be explained on the basis of linguistic handicap. (3) Although the test is completely independent of language, the rank-orders of the various racial groups correspond very closely to the results of other investigators using verbal tests.

Greene. It was the problem of Greene's[49] study to determine the educational opportunities of migratory agricultural families. Greene found that Spanish American migrant children, because of the unusual conditions surrounding their childhood and youth, have special needs which include the following -- (1) They have need for the feeling of security. (2) They have need for a feeling of belongingness. (3) They have the need to know and to acquire information. (4) They have the need to experience success. Greene concluded that equality of educational opportunity is an accepted American ideal, but there is a hiatus between statement and performance. The quality and amount of schooling received by several million children are below the accepted American standard of equal chance. Among these millions are several hundred thousand children who follow the crops.

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[47] Garth, Thomas R.; Holcomb, Walter M.; and Gesche, Irma, "Mental Fatigue of Mexican Children," *The Journal of Applied Psychology*, 16:675-680, December, 1932.

[48] Goodenough, Florence L., "Racial Differences in the Intelligence of School Children," *Journal of Experimental Psychology*, 9:388-397, October, 1926.

[49] Greene, Shirley E., *Social Action: Children of Misfortune*, The Council for Social Action, New York, 1954, 41 pp.

Greene. It was the problem of this study by Greene[50] on migrant children "to provide a factual, objective basis for plans and programs to improve the educational opportunities and experience of the children of migratory agricultural workers." The project was conducted by the Migrant Research Project Board with a grant of more than $40,000.

Some of the findings of Greene's study included -- (1) Within the compulsory attendance age brackets, 7 - 15 years inclusive, 78 per cent of the children were enrolled in school. (2) One hundred fourteen of the 197 school principals listed absenteeism as a problem, 65 as a serious problem. (3) Over one-third of the children became retarded as early as their second year. (4) Two-thirds of the children were over-age for the grade. (5) In grades 2 to 6 between one-third and one-half were placed from one to three grades higher than their scholastic attainment warranted. (6) One hundred twenty principals and teachers favored integration of migrant and non-migrant children for instructional purposes. (7) Leading the list of problems felt by principals and teachers in connection with migrants were retardation, teacher overloads, overcrowding of facilities and absenteeism. (8) Suggestions made by principals and teachers for improving migrant education included more practical and vocational subjects, expanded facilities, additional and specialized teachers, attendance enforcement, adult education, improved home life, and economic opportunity for migrant workers. (9) In schools where migrants are a small minority, definite differences appear suggesting superiority of non-migrants over migrants in achievement, operational ability, and personality adjustment.

Gustafson. Gustafson[51] attempted to determine whether ethnic group membership acts as one effective factor in the retention of selected facts pertaining to American history and culture. Two ethnic groups -- Jewish and Negro, all being American -- were used in the study conducted in Akron, Ohio. The investigator established the following conclusions --

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[50] Greene, Shirley E., The Education of Migrant Children: A Study of Educational Opportunities and Experiences of the Children of Agricultural Migrants, National Council of Agricultural Life and Labor, and the Department of Rural Education of the National Education Association, Washington, D. C., 1954, 179 pp.

[51] Gustafson, Lucille, "Relationship between Ethnic Group Membership and the Retention of Selected Facts Pertaining to American History and Culture," The Journal of Educational Sociology, 31:49-56, October, 1957.

(1) Each pupil operates from his own specific frame of reference -- his accumulation of attitudes created by past experiences, needs, and group memberships. (2) This frame of reference determines what he perceives, experiences, and remembers. (3) Ethnic group membership is an effective factor in the retention of selected facts pertaining to American history and culture. (4) Students in the same classroom may have comparable amounts of learnings, and yet, so selective are the processes of perception and retention that very different things are learned. The investigator also identified the following implications of her research -- (1) It may be more important to learn why a child does not learn than that he does learn certain selected facts. (2) Ethnic group membership would play a selective learning role wherever and whenever cultural values are involved.

Halpern. It was the problem of this study by Halpern[52] to determine the intelligence of bilingual Jewish girls. The subjects used in the study included 100 ten-year-old Jewish girls with an average age of 125 months in two public schools of New York City. Halpern found (1) There is no difference in the scores obtained by monoglot and polyglot groups of ten-year-old Jewish girls. (2) The groups which show the highest scores on performance tests are not the groups which suffer from the greatest language handicap. (3) Polyglot groups do not equal or surpass monoglot groups on performance tests. (4) Jewish girls do considerably poorer work on performance tests than on tests of verbal ability. (5) "The group of children whose parents have been in this country twelve years or less is definitely superior to the group whose parents have been here twenty-five years or more." On the basis of her findings Halpern concluded (1) Jewish girls do not suffer from a language handicap. (2) Jewish girls have a pronounced superiority in verbal ability as compared with the type of ability measured by the Pintner-Paterson Performance Tests.

Haught. In his study of the Southwestern Indian Haught[53] attempted to determine the following -- (1) Does the mental growth of the Southwestern Indian parallel the change in his chronological age? (2) Are there periods in the mental growth of the Southwestern Indian that are characterized by acceleration or retardation? (3) How does the Southwestern Indian compare in mental ability with the white race? (4) At what age does the mental growth of the Southwestern Indian terminate? (5) To what extent is a test made for the white race indicative of the actual mental equipment of the Southwestern Indian? Haught administered tests to Indians enrolled in Federal Indian Schools in Albuquerque and Santa Fe. He found the following -- (1) From the chronological ages of six to nine years the mental growth of the Southwestern Indian is approximately parallel with his chronological age but about one year retarded. (2) From the age of nine to sixteen the retardation of the mental age increases from year to year, and somewhat uniformly. (3) There are no periods of acceleration in the mental growth of the Southwestern Indian up to the age of sixteen. (4) Retardation is constant from the ages of six to nine; increases from 1.2 years at the age of nine to 2.3 years at the age of twelve; and increases from 2.3 years at the age of twelve to 4.7 years at the age of sixteen. (5) In mental age the Indian of the Southwest is from 1.0 to 4.7 years below the whites. His intelligence quotient ranges from 71 to 57. It is highest at nine and lowest at sixteen. (6) On intelligence tests the Indian is below the whites. (7) "Indians make lower scores than whites because they are lower in native ability."

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[52] Halpern, Florence C., *The Intelligence of Bilingual Jewish Girls as Measured by the Stanford-Binet Test and the Pintner-Paterson Performance Tests*, Master's Thesis, Columbia University, New York, 1933, 33pp.

[53] Haught, B. F., "Mental Growth of the Southwestern Indian," *The Journal of Applied Psychology*, 18:137-142, 1934.

Haught. It was the problem of this study by Haught[54] to compare intelligence quotients with chronological ages. All the Spanish children from four school systems were selected. They ranged in ages from 7 to 19, and in grades 1 through 12. The Pintner-Cunningham Mental Test was used in grades 1 to 3; the National Intelligence Tests in grades 4 to 7, and the Terman Group Tests of Mental Ability in grades 8 to 12. On the basis of the study Haught concluded the following -- (1) "Intelligence quotients of Spanish children . . . do not increase with chronological age, but there is a slight tendency for them to decrease." (2) "There is a sudden drop in intelligence quotients at about 10 years of age." (3) "Since the older children are handicapped as much as the younger, there seems to be no justification for assigning the difficulty to inability to use or understand English." (4) "Until the existence of a language handicap on the part of Spanish children is demonstrated by properly controlled experiments, it seems safer to avoid using the concept as an explanatory principle in educational problems." (5) "The average Spanish child has an intelligence quotient of 79 as compared with 100 for the average Anglo child." (6) "There are some Spanish children as bright as the very superior Anglo children."

Havinghurst and Hilkevitch. It was the problem of this study by Havinghurst and Hilkevitch[55] "to find out in what ways children of several Indian tribes in the plains and Southwest vary from tribe to tribe in their performance on a standard intelligence test" and "to find out how Indian children compare with white children on this test." The Arthur Point Performance Scale was used because "it requires a minimum of acquaintance with the English language." Children from six Indian tribes were tested -- Sioux, Navaho, Papago, Hopi, Zuni, and Zia. There were 670 children, ages 6 through 15, included in the study.

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[54] Haught, B. F., "The Language Difficulty of Spanish American Children," Journal of Applied Psychology, 15:92-95, 1931.

[55] Havinghurst, Robert J., and Hilkevitch, Rhea R., "The Intelligence of Indian Children as Measured by a Performance Scale," Journal of Abnormal and Social Psychology, 39:419-432, October, 1944.

On the basis of the study, the investigators established the following conclusions -- (1) American children from several different tribes do as well as white children on a performance test of intelligence. (2) Differences in test intelligence are found between groups within Indian tribes just as they may be found between various groups in the white population. (3) There is some evidence that the Indian groups which are least influenced by white culture do not do as well on the Arthur test as those who have had more white influence and schooling. (4) The statement that Indian children work more slowly than white children on speed tests is contradicted. (5) The Grace Arthur Performance Test may be successfully used with Indian children in the shortened form. (6) "A performance test of intelligence would be more valuable for educational placement and guidance of Indian children in the Southwest than an intelligence test which required much use of the English language."

Havinghurst, Gunther, and Pratt. It was the basic problem of the study by Havinghurst, Gunther, and Pratt[56] to determine the relationship between the environment of Indian children to their intelligence. The Goodenough Draw-A-Man Test was given to 325 Indian children of the Sioux, Hopi, Zuni, Zia, Navaho, and Papago tribes in nine communities in the age group 6 through 11. Intelligence quotients from the Arthur Performance Test were available for the same groups. The investigators found that (1) correlation coefficients between the Draw-A-Man and the Arthur I.Q.'s were low, and (2) there is no change of Draw-A-Man I.Q. with age among the Indian children. On the basis of these findings the investigators concluded that (1) Indian children do better than white children on the Draw-A-Man Test. (2) Environment affects the performance of children on the Draw-A-Man Test. (3) The Draw-A-Man Test is valid for one aspect of general intelligence -- the ability to form concepts based upon observation.

Herr. It was the problem of the study by Herr[57] to find the effect of a year of pre-first-grade training upon the reading readiness and achievement of Spanish-speaking children in the first grade. Nine towns in New Mexico were used in the experiment. Through the use of the Pintner-Cunningham Primary Intelligence Test and by a subjective analysis of vocabulary ability and home environment, two groups of five-year-olds of the communities were equated for the control and the experimental groups.

Herr found the following -- (1) The children with a year of pre-first-grade work had an average percentile rank of 48.48±.40 on the norms of the Metropolitan Reading Readiness Tests as compared to an average of 7.81±.38 for the control group. (2) The differences between the two averages was 40.67±.55. (3) The chances of grade status for the end of the first year were as follows: (a) *For the experimental group*: (i) Sixteen per cent will reach the grade level of 1-9 or over. (ii) Fifty per cent will reach the grade level of 1-6 or over. (iii) Forty-seven per cent will fail to receive promotion. (b) *For the control group*: (i) None of the children can expect promotion.

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[56] Havinghurst, Robert J.; Gunther, Minna Korol; and Pratt, Inez Ellis, "Environment and the Draw-A-Man Test: The Performance of Indian Children," *Journal of Abnormal and Social Psychology*, 41:50-63, January, 1946.

[57] Herr, Selma E., "The Effect of Pre-First-Grade Training upon Reading Readiness and Reading Achievement among Spanish-American Children," *The Journal of Educational Psychology*, 37:87-102, February, 1946.

On the basis of her findings Herr concluded that pre-first-grade training is an important factor in success in learning to read among Spanish-American children.

Hill. It was the problem of the study by Hill[58] to do the following: (1) To weigh the effect of bilingualism on the scores of a variety of recognized tests of intelligence by comparing Italian children who heard and spoke Italian at home with Italian children who heard and spoke English at home. (2) To show the combined influence of certain variable factors, such as race, intelligence, and environment, on the scores of recognized tests by comparing English-speaking children of Italian parentage with English-speaking children of Anglo-American parentage.

On the sixth-grade level, fifty Italian children who heard and spoke Italian at home were matched in chronological age, mental age, intelligence quotient, and sex with fifty Italian children who heard and spoke English at home. The most prominent feature of their dissimilarity was the ability to use and to understand the Italian dialect of the community. On the third-grade level thirty-six Italian children were matched similarly. On the first-grade level thirty-six Italian children were matched similarly. On the basis of his study Hill concluded the following -- (1) Italian children who hear and speak Italian at home are not inferior to Italian children who hear and speak English at home on a verbal group test of intelligence. (2) Italian children who hear and speak Italian at home are not superior to Italian children who hear and speak English at home on a non-language test of intelligence. (3) Italian children who hear and speak Italian at home are only partially superior to Italian children who hear and speak English at home on a test of concrete intelligence. (4) Italian children who hear and speak Italian at home do as well on the various subtests of verbal or non-verbal group intelligence tests as Italian children who hear and speak English at home. (5) Italian children who hear and speak Italian at home observe, analyze, and recall the parts of English words as well as Italian children who hear and speak English at home. (6) The score obtained by an Italian child on a non-verbal test is a fair indication of the score the same child will obtain later on an extremely verbal test. (7) There is some indication that familiarity with the Italian dialect increases with chronological age. (8) There is small indication that the Italian child who makes a high score on a verbal group test is also more familiar with the Italian dialect of the community. (9) A verbal group test of intelligence is as reliable a measure of the intelligence levels of Italian children who hear and speak Italian at home as a non-verbal or a non-language group test. (10) When English-speaking children of Anglo-American parentage are matched only in chronological age, sex, school progress, and order of birth with English-speaking children of Italian parentage, fairly reliable differences are found between the groups compared. (11) No reliable differences in scores on verbal, non-verbal, and performance tests are revealed between Italian children who speak Italian at home and Italian children who hear and speak English at home.

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[58] Hill, Harry Segner, *The Effect of Bilingualism on the Measured Intelligence of Elementary School Children of Italian Parentage*, Doctor's Dissertation, Rutgers University, Trenton, New Jersey, 1935, 220 pp.

Hill concluded that the effect of bilingualism on the measured intelligence of Italian children who hear and speak Italian at home may be disregarded.

Hill. It was the problem of Hill's[59] investigation "to weigh the effect of bilingualism on the scores of a variety of recognized tests of intelligence by comparing Italian children who heard and spoke Italian at home with Italian children who heard and spoke English at home." Basic questions inherent in the problem were -- (1) "Will Italian children who hear and speak Italian at home do as well as Italian children who hear and speak English at home on a verbal test of intelligence, on a non-verbal or non-language test, on a performance test, on the various sub-tests of a group test, and on a spelling test?" (2) "How well does a non-verbal test given the Italian child when first entering school indicate what that child will do later on an extremely verbal test?" (3) "Does familiarity with the Italian dialect increase with chronological age?" (4) "Is the more intelligent Italian-speaking child also the more familiar with the Italian dialect?" (5) "Is a verbal group test as reliable a measure of the intelligence levels of Italian-speaking children of Italian parentage as a non-verbal or non-language group test?"

Fifty cases in one group of elementary school students were paired with fifty cases in another group. The pairings were made on the basis of sex, chronological age, mental age, and intelligence quotient. Both groups were of Italian nationality. The most prominent dissimilarity was the ability to use and understand the Italian dialect of the community. The instruments used in the study included the National Intelligence Test (Scale A, Form I), Otis Self-Administering Test of Mental Ability, List 8 of the Morrison-McCall Spelling Scale, the Army Beta Group Examination, Witmer Cylinder Test, Haggerty Intelligence Test, Delta I, Pintner Non-Language Mental Test, and others.

On the basis of his research Hill concluded the following -- (1) "Italian children who hear and speak Italian at home are not inferior to Italian children who hear and speak English at home on a verbal group test of intelligence." ("No reliable differences between the groups are found either in the size or the variability of the scores.") (2) Italian children who hear and speak Italian at home are not superior to Italian children who hear and speak English at home on a non-language test of intelligence. ("Fairly reliable differences are found on various sub-tests, but complete reliability of superiority in all the sub-tests is lacking.") (3) Italian children who hear and speak Italian at home are only partially superior to Italian children who hear and speak English at home on a test of concrete intelligence. ("Evidence of a marked superiority is definitely lacking.") (4) Italian children who hear and speak Italian at home do as well on the various sub-tests of verbal or non-verbal group intelligence tests as Italian children who hear and speak English at home. (5) Italian children who hear and speak Italian at home observe, analyze, and recall the parts of English words as well as Italian children who hear and speak English at home. (6) The score obtained by an Italian child on a non-verbal test is a fair indication of the score the same child will obtain later on an extremely verbal test. ("The coefficient of correlation between the Pintner-Cunningham I.Q.'s and Otis I.Q.'s is .72 ± .038.") (7) Familiarity with the Italian dialect increases with chronological age. ("The coefficient of correlation between chronological age and Tests of Italian Word-Meaning is .241 ± .031.") (8) The child who makes a high score on a verbal group test is also more familiar with the Italian dialect of the community. ("The coefficient of correlation between National I.Q.'s and a Test of Italian Word Meaning is .113 ± .034.") (9) A verbal group test of intelligence is as reliable a measure of the intelligence levels of Italian children who hear and speak Italian at home as a non-verbal or a non-language group test. ("Equation of the groups on the basis of a verbal test results in equivalence on the basis of a non-verbal or non-language test.")

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[59] Hill, Harry Segner, "The Effect of Bilingualism on the Measured Intelligence of Elementary School Children of Italian Parentage," Journal of Experimental Education, 5:75-78, September, 1936.

In summary Hill states, "The effect of bilingualism on the measured intelligence of Italian children who hear and speak Italian at home may be disregarded."

Hoffman. It was the problem of the study by Hoffman[60] to develop an instrument to measure quantitatively the extent of bilingual background of a subject and to determine the relationship between bilingual background and the factors of age, sex, and scores on certain intelligence and reading tests.

Items constructed for the Bilingual Schedule included various situations or aspects of speaking, reading, writing and listening. The standardization group consisted of 547 pupils of grades 5 to 8 who were all native born with at least one parent foreign born. The reliability and the validity or differentiating value were determined for each item as well as for the entire schedule. Tentative norms in the form of percentile ranks were established. To determine the relationship between bilingual background and scores on the verbal intelligence, the non-language intelligence, and the reading tests, the bilingual scores of a group of 89 Italian and 25 Jewish girls of grades 5 and 6 were correlated with their scores on the several variables, for each nationality separately and for both nationalities combined. Another method, that of comparing for each nationality the mean intelligence and reading scores of the highest and the lowest quartile of bilingual background, was also used.

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[60] Hoffman, Moses N. H., *The Measurement of Bilingual Background*, Contributions to Education, Number 623, Teachers College, Columbia University, New York, 1935.

Hoffman's findings were as follows -- (1) The coefficient of validity found by correlating the bilingual scores against ratings as to the extent of bilingual background was .73 ± .03. (2) The coefficient of correlation between the bilingual scores of the children and estimates of the extent of bilingual background based upon interviews with the parents was .82 ± .03. (3) The validity of the schedule was established by proving that it differentiated between groups whose extent of bilingual background was known. (4) For a group of 108 pupils the retest reliability coefficient, with an interval of 3 weeks, was .81 ± .02. (5) The reliability coefficient between split-halves of the Schedule was .845. The reliability coefficient for the total schedule was .92. (6) Bilingual background was not associated with chronological age nor with grade status for ages 10 to 14 and grades 5 to 8. ("There is no tendency for older children to have either higher or lower bilingual scores than younger children.") (7) There was no sex difference with regard to either the size or the variability of the bilingual scores. (8) Results obtained for a group composed of several nationalities were contrary to those found for any particular one of the nationalities in the group. ("It is therefore best to treat each nationality separately.") (9) The extent of bilingual background is related with achievement on verbal material, but not with performance of the non-language type. (10) The correlation between bilingual background and reading scores is influenced by the relationship existing between these variables and verbal intelligence scores. (11) The Italian girls in the study having a high degree of bilingual background were handicapped on verbal and language tests. (12) The Jewish girls tended to benefit on verbal tests by a high degree of bilingual background. (13) The performance of the Jewish girls and the Italian girls was "not affected one way or the other by the extent of bilingual background."

International Institute of Teachers College. It was the problem of this study by The International Institute of Teachers College[61] to analyze (1) the economic and social background, (2) the results of instruction, (3) the elementary education, (4) the secondary education, (5) the teaching staff, (6) the teacher education, (7) the administration and supervision, (8) the financing, and (9) higher education of Puerto Rico.

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[61] The International Institute of Teachers College, Columbia University, *Survey of the Public Educational System of Puerto Rico*, Bureau of Publications, Teachers College, Columbia University, New York, 1926, 453 pp.

1. "A most unpopular plan . . . was pursued . . . for six years . . . to teach only English in the first grade and to introduce Spanish in the second. . . All subjects except Spanish were taught in English. The results showed that the general advancement was being severely handicapped and that progress in spoken English was not as satisfactory as had been expected. At present English is taught orally as a special subject in the first and second grades of the urban schools; and in the second and third grades of the rural schools. Formal reading in English is deferred until the third grade in the urban schools. Up through the fourth grade Spanish is now the language of instruction in all classes except those in English; while from the fifth upwards all instruction is given in the English language."

On the basis of its study the Institute recommended the following -- (1) "Political, social, economic expediency makes it desirable that large numbers of Puerto Ricans, ultimately all of them, should be given a thorough knowledge of English." (2) "This result can and should be accomplished without decreasing their knowledge of Spanish culture or their ability to use their native language." (3) "While English shall be the language of instruction in the upper grades and in high schools, the Commission recommends that the pupils be given ample opportunity to read reference books in Spanish in all subjects, such as geography, history, and science, in addition to the basic English texts."

Johnson. It was the problem of this study by Johnson[62] to devise an instrument which could be used in the investigation of racial attitude bases and development by analyzing personality as a whole, thus making it possible to investigate the dynamics of behavior. Ninety bilingual Spanish males, ages four, eight, and twelve, and ninety Anglo males, ages four, eight, and twelve, in a Southwestern town were used in the study. Johnson established the following conclusions -- (1) Each picture of the test has a positive relationship with the other pictures of the test. (2) Though there is a marked general factor, each picture makes a specific contribution to the total prejudice score.

Johnson. It was the problem of this study by Johnson[63] "to ascertain the relationship existing between a language and a non-language test of intelligence and to note the role which the degree of bilingualism as measured by a reaction-time technique plays in this relationship."

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[62] Johnson, Granville B., "An Experimental Projective Technique for the Analysis of Racial Attitudes," *The Journal of Educational Psychology*, 41:257-278, May, 1950.

[63] Johnson, Granville B., "Bilingualism as Measured by a Reaction-Time Technique and the Relationship between a Language and a Non-Language Intelligence Quotient," *The Journal of Genetic Psychology*, 82:3-9, March, 1953.

Thirty Spanish boys from the southwest region of the United States were the subjects of this investigation. They were delimited in that their ages ranged from 9 through 12 years and were in school grades four through six. All of the boys used English in school and each had a knowledge of the Spanish language. The Goodenough Draw a Man Test was administered to each of the subjects and was followed by the Otis. After the tests of intelligence had been administered, a team of three persons administered the Hoffman Test of Bilingualism. Relationships between the Otis and Goodenough, Hoffman and Goodenough, Otis and the Reaction-Time Test of Bilingualism, and Goodenough and Reaction-Time were established.

Johnson's findings were as follows -- (1) The Hoffman and the Reaction-Time Tests appear to be measures of common factors since their relationships with the intelligence tests, though varying quantitatively, are in the same direction. The Reaction-Time Test appears to be the more sensitive measuring instrument of the two. (2) There was a negative relationship between performance on the Otis and the degree of bilingualism. (3) The relationship between the two measures of intelligence was found to be insignificant ($r = -.022$), revealing that they are probably tests of separate factors. (4) The coefficient of correlation between the Reaction-Time Test of Bilingualism and the discrepancy between the Otis Test and the Goodenough Draw a Man was found to be significant at the .01 level ($r = .663$); the Hoffman and the Goodenough-Otis discrepancy relationship was insignificant as was the relationship between the Hoffman and the Reaction-Time Test. (5) Greater knowledge of English in comparison with knowledge of Spanish is associated with less discrepancy between the Otis and the Goodenough intelligence quotients. On the basis of his study Hoffman concluded the following -- (1) "Measuring the intelligence of bilingual subjects presents complex problems which possibly render both linguistic (Otis) and performance (Goodenough) tests invalid." (2) Administration of objective tests of intelligence to individuals possessing a language other than English as the primary language yields invalid results. This is not so much the result of the testee's inability to read, but rather his lack of acquaintance with the nuances of culture which compose, in part, the intelligence test. (3) A proposed method of ascertaining the extent to which the dominant culture has been assimilated by the bilingual is to measure the knowledge of the language of that culture. Knowledge of the language is reflective of the degree to which the individual has assimilated the cultural elements of which the language is representative.

Johnson. It was the problem of this study by Johnson[64] to ascertain the degree of prejudice in progressively mature age groups of Spanish and Anglo subjects utilizing the Projective Test of Racial Attitudes and to reveal something of the origin and development of racial attitudes. Johnson's findings included the following -- (1) Both ethnic groups manifest a clear picture of development of racial attitude from the early levels to the older. (2) Each revealed positive or negative prejudice. (3) Both superiority and submission, defeat and victory, are expressions of prejudice -- different patterns of attempt to adjust to conflict. (4) The Anglo group showed the greatest development in the final dominance of the Anglo over the Spanish and in the superiority of the Anglo to the Spanish. Contrary to this, the Spanish displayed as the most weighted factor in the total prejudice score the manifestations of frustration in reacting to the Anglo environment and in ultimate victory of the Spanish. (5) Anglos were less optimistic about the Spanish-Anglo relationship than were the Spanish. (6) The Anglos appeared to be the aggressors and the Spanish merely attempting to adjust to this aggression. (7) The Spanish at the four-year level appeared less prejudiced than the Anglos of the same age (significance of the difference at .25 level), but during the ensuing four years this negative attitude developed to a level approximating that of the twelve-year-olds of that ethnic group. In distinction to this the Anglo attitude developed little between the fourth and eighth years. Rapid acceleration, however, during the next four years (corresponding in developmental progress to the Spanish four- to eight-year period) put the Anglo at the highest level of prejudice of all groups and ages studied.

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[64] Johnson, Granville B., "The Origin and Development of the Spanish Attitude Toward the Anglo and the Anglo Attitude Toward the Spanish," The Journal of Educational Psychology, 41:420-439, May, 1950.

Johnson. It was the problem of this investigation by Johnson[65] "to determine the relationship existing between the bilingual background of Spanish subjects and the attitude of the Spanish toward the Anglo ethnic group.

The Projective Test of Racial Attitudes and the Hoffman Bilingual Schedule were used in the study. There were 30 male Anglo subjects for each of the 4, 8, and 12 year levels, 90 in all, from public schools in a southwestern town. There were 30 male Spanish subjects for each of the 4, 8, and 12 year levels, 90 in all, from public schools in a southwestern town. The method of prodedure used to ascertain the relationship was to derive the prejudice score from each of the Spanish protocols of the Projective Test of Racial Attitudes and correlate it with the bilingual score of the Hoffman Bilingual Scale.

Johnson found the following -- (1) The rectilinear relationship existing between bilingual background and racial prejudice increased progressively with age. (2) Curvilinear analysis demonstrated that, at the four-year level decreasing progressively through the eighth and twelfth years, there was a tendency for those subjects with least prejudice to have the highest and lowest bilingual scores. (3) Though the curvilinear function at the four-year level was possibly reflective of parental disposition, it indicated, nevertheless, that a profound knowledge of the Anglo culture or no knowledge of it yielded least bias toward it. Possibly, with less bilingual background, the Spanish become part of the Anglo culture and in many cases identify themselves with it. This tendency might explain the finding for many of the younger Spanish subjects to be prejudiced in favor of the Anglo.

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[65] Johnson, Granville B., Jr., "The Relationship Existing between Bilingualism and Racial Attitude," Journal of Educational Psychology, 42:357-365, October, 1951.

Johnson. It was the problem of this study by Johnson[66] to do the following -- (1) To compare the vocabularies, as revealed by certain tests, of groups of Spanish-American High-School pupils with the vocabularies of groups of Anglo-American high-school pupils. (2) To determine and compare the increase in vocabularies made by the relative groups. (3) To interpret the findings as they pertain to the bilingual problems of the Southwest. Johnson found that (1) Spanish-American high-school pupils labor with a definite vocabulary handicap as compared with Anglo-Americans in the same schools. (2) Spanish-American high-school pupils are retarded from seven to twelve months as compared with Anglo-American pupils. (3) Though the school census shows a potential school population of Spanish-Americans as great or greater than that of Anglo-Americans, not more than a third as many Spanish-Americans as Anglo-Americans are in high school.

Jones. In his study on environmental handicap Jones[67] attempted "to determine the nature and extent of environmental influences upon mental test performance -- whether general or specific; whether transitive or cumulative, and if cumulative, whether in the direction of improvement or impairment." On the basis of his study he concluded the following -- (1) A rural child moving to the city would increase his intelligence test scores, merely as a result of changed environmental conditions. (2) The environmental handicap of the rural child is derived chiefly from specific limitations in the material environment, and from social differences which achieve expression in linguistic information and skill, in the speed of test performance, and in adaptation to test situations. (3) "The handicap is specific, not general; depending on the test items, it is sometimes transitory but more often cumulative; the cumulative effect is sometimes in the direction of diminution, sometimes in the direction of increase of handicap." (4) Within a rural or urban group, the validity of the I.Q. in measuring native differences is dependent upon the social and educational homogeneity of the group. Whether or not the I.Q. itself is constant, it is fairly clear that its meaning is inconstant: as ages change, and as the homogeneity of the groups changes, individual differences in I.Q. will represent changing degrees of relative hereditary and environmental influences.

Jones. It was the problem of this study by Jones[68] to determine the influence of reading ability in English onnthe scores of Welsh-speaking (bilingual) children in an English intelligence test. Two random groups of children were obtained from an English-speaking and a Welsh-speaking area of Caernarvonshire, respectively. They consisted of all those present in school on the day of the testing whose ages fell between 10:0 and 12:0. Three tests were used as follows --

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[66] Johnson, Loaz W., "A Comparison of the Vocabularies of Anglo-American and Spanish-American High-School Pupils," The Journal of Educational Psychology, 29:135-144, February, 1938.

[67] Jones, H. E.; Conrad, H. S.; and Blanchard, M. B., Environmental Handicap in Mental Test Performance, University of California Press, Berkeley, 1932, pp. 63-99.

[68] Jones, W. R., "The Influence of Reading Ability in English on the Intelligence Test Scores of Welsh-Speaking Children," The British Journal of Educational Psychology, 23:114-120, June, 1953.

1. Jenkins's Scale of Non-verbal Mental Ability was used to measure I. Q. relatively free from the reading factor.

2. Moray House Intelligence Test 42 was used to measure I.Q. involving reading ability, and it was given in English to both groups.

3. Schonell's Silent Reading Test B (Test R4) provided a measure of the reading ability of both groups in English on the basis of new norms now available for the test.

Jones' findings were as follows -- (1) It was found that the two groups, monoglot and bilingual, did not differ significantly in non-verbal intelligence. There was no significant difference in the variability of scores between the two samples. (2) There was a highly significant difference of 10.63 points of I.Q. in favor of the monoglot group on the basis of a comparison of the mean scores of both groups in the verbal intelligence test. (3) A comparison of the two groups in respect of reading ability in English showed that the bilingual group was significantly inferior to the monoglot group. The mean difference amounted to 7.90 points of R.Q.

On the basis of these findings, Jones made the following conclusions -- (1) Monoglot (English) and bilingual (Welsh) groups, which are equal in non-verbal intelligence and "matched" in respect of reading ability in English, differ significantly in an English verbal intelligence test. (2) Some factor or factors other than intelligence and ability to comprehend printed material in English account for the significant difference between the adjusted means in intelligence. (3) The residual inferiority of the bilingual children in the English verbal intelligence test (as shown by the analysis of covariance) may be due to the fact that they find it difficult to "think in English" with an accurate degree of facility and accuracy as a result of their manner of training and of linguistic environment in which the passive rather than the active aspect of English as a second language predominates.

Jones. It was the problem of the study by Jones[69] to determine the language handicap of bilingual children.

One hundred and seventeen children, ages 10:2 to 12:0, were tested in five schools situated in predominantly Welsh-speaking areas. The children came from homes where Welsh is always spoken, and they had gained their knowledge of English outside the home, mainly in school. The schools themselves had a distinctly Welsh atmosphere. The schools were situated in adjacent quarrying districts, and it was, therefore, expected that the social environment of the pupils would not vary considerably from school to school. An attempt, however, was made to obtain more accurate information about the socio-economic background by asking the head-teachers to give details of parental occupations. These were then classified according to a standard grading which aims at distinguishing between occupations according to their social prestige: in each school, all parental occupations apart from a few exceptions, belonged to the skilled manual, semi-skilled manual, or unskilled grades.

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[69] Jones, W. R., "The Language Handicap of Welsh-Speaking Children: A Study of their Performance in an English Verbal Intelligence Test in Relation to their Non-Verbal Mental Ability and their Reading Ability in English," British Journal of Educational Psychology, 22:114-123, June, 1952.

The following instruments were used -- (1) The Jenkins Scale of Non-verbal Mental Ability was used to measure I.Q. relatively free from the reading factor. (2) The Moray House Intelligence Test 42 was used as a verbal test to measure I.Q. involving any reading factor. (3) Two reading tests were used -- (a) Schonell's Graded Reading Vocabulary Test was used as a measure of the children's mechanical word-pronouncing ability, and (b) the Watts-Vernon Silent Reading Test was used as a measure of their knowledge of word meanings and comprehension of sentences and paragraphs.

The findings of the study were as follows -- (1) The mean non verbal I.Q. was significantly higher than the mean verbal I.Q. in four of the five schools, and also in all schools taken together. This difference between non-verbal and verbal I.Q. tended to diminish as reading age in English increased. (2) The non-verbal and verbal tests were not found to inter-correlate differently from school to school. Individual r's were, therefore, combined to obtain an average correlation for all schools; its value suggested that the verbal test, in spite of the children's lack of facility in reading English, gave an order of merit of I.Q. similar to the non-verbal test. (3) No significant differences were found between the schools in respect of intelligence. Some schools, however, showed a significant superiority in English reading. This was thought to be due either to the teaching factor or to socio-economic differences between the schools, or to a combination of these causes. (4) A steady rise in reading age was found as one passed from lower to higher levels of I.Q. in the non-verbal test. (5) In four of the five schools and also in all schools taken together, mean scores for mechanical reading were significantly higher than those for comprehension. (6) Differences between the boys and girls were not significant in any of the tests. One only of the differences in dispersion of scores was significant -- girls showed a significantly greater variability in the non-verbal test.

Jordan. Jordan[70] attempted to determine the relationship between school progress and nationality. On the basis of his study he concluded the following -- (1) There "are differences in amount of retardation existing between various national groups." (2) National differences exist according to school marks, but school marks are unreliable even when based on quartile ratings. (3) National differences exist according to diagnostic measures --

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[70] Jordan, R. Harding, Nationality and School Progress: A Study in Americanization, Public School Publishing Company, Bloomington, Illinois, 1921, 105 pp.

objective type tests. (4) The national differences are most marked in the language tests. (5) "It is definitely certain that those pupils who comprehend most clearly and distinctly the instruction which is given, other things being equal, will progress the most rapidly, and accomplish the most, both in quantity and quality." (6) Language difficulties do not disappear "in the first few years. . . . The language superiority of the American child places him at an advantage during his entire elementary school course and . . . . even into the high school."

Kelley. It was the problem of Kelley's[71] study to determine the reading difficulties and abilities of Spanish and English speaking pupils -- (1) To make a comparison of the reading abilities of Spanish and English speaking children in three school systems, and to compare the results with the norms established for the tests. (2) To determine the particular phases of reading in which the Spanish speaking children are deficient.

Three towns in Northern Arizona -- Flagstaff, Williams, and Winslow -- cooperated in a reading testing program carried on during the spring of 1933. A total of 692 pupils in grades four to eight were tested, 303 pupils (43.8 per cent) of which were children from homes in which Spanish was spoken almost entirely. The instruments used in the study included the Iowa Silent Reading Tests for grades four to nine, including the sections on comprehension, organization, ability to locate information, and rate of reading.

Data on the total comprehension scores and the average age of the Spanish and English speaking pupils in grades 4 to 8 inclusive were as follows:

MEDIAN SCORES OF ENGLISH AND SPANISH SPEAKING PUPILS IN TOTAL COMPREHENSION

	Grade	Number of Pupils	Average Age	Average Grade Equivalent in Comprehension	Norm
Spanish	4	73	11.9	3.3	4.0
English	4	64	9.6	4.2	
Spanish	5	65	12.1	4.4	5.0
English	5	86	10.7	5.1	
Spanish	6	70	13.5	5.4	6.0
English	6	82	11.6	6.4	
Spanish	7	53	13.8	6.4	7.0
English	7	53	12.7	7.3	
Spanish	8	42	14.8	6.8	8.0
English	8	84	13.4	7.9	

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[71] Kelley, V. H., "Reading Abilities of Spanish and English Speaking Pupils," Journal of Educational Research, 29:209-211, November, 1935.

The conclusions of the study were as follows -- (1) On total comprehension the Spanish-speaking children are below the norm in each grade, the eighth grade being over a year below the norm. (2) Deficiencies of the Spanish speaking children are not confined to any one phase of reading ability. (3) "The problem of correction is one in which all phases of the reading ability will need to be improved rather than one in which a few deficiencies can be removed."

Kephart. It was the problem of a study by Kephart[72] to determine the relationship between intelligence, as expressed by intelligence quotient, and environmental setting. A study was made of fifty children at the Wayne County Training School, an institution for high grade moron and borderline children. Kephart's conclusions were as follows -- (1) With high-grade moron and borderline children, the rate of mental growth can be significantly increased in a favorable institutional situation by specific programs of stimulation. (2) Changes in the mental growth appear to be possible at both the relatively early and relatively late chronological-age levels.

Keston. It was the problem of Keston's[73] study (1) to determine whether the bilingual children of Albuquerque, New Mexico, should be given the Stanford-Binet Intelligence Test in a translated Spanish version or in the original English form, and (2) to compare the intelligence test scores of these children in the one language with their intelligence test scores in the other language.

A random sample of 50 bilingual fourth-grade children was obtained from five schools located in different sections of the city. The examiner made a qualitative judgment that a subject was or was not bilingual. The children were given Form M of the 1937 Stanford-Binet Intelligence Test. Four weeks later they were given Form L of the same test in a Spanish translation by Dr. Jose Germain Cebrian. All the tests were administered by a bilingual person who spoke Spanish natively. The ages of the subjects ranged from 9 years and 3 months to 11 years and 9 months with an average age for the group of 9.85 years. Twenty-two of the subjects were boys and 28 were girls.

The findings of Keston's study included the following -- (1) A correlation of .36 was found between the I.Q.'s obtained in Form M in the English version and Form L in the translated Spanish version. Terman and Merrill report a correlation of .93 between Form L and Form M of the

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[72] Kephart, Newell C., "Influencing the Rate of Mental Growth in Retarded Children through Environmental Stimulation," The Thirty-Ninth Yearbook of the National Society of the Study of Education, pp. 223-230, Intelligence: Its Nature and Nurture, Part II, Original Studies and Experiments, Public School Publishing Company, Bloomington, Illinois, 1940.

[73] Keston, Morton J., and Jimenez, Carmina, "A Study of the Performance on English and Spanish Editions of the Stanford-Binet Intelligence Test by Spanish-American Children," The Journal of Genetic Psychology, 85:263-269, December, 1954.

Stanford-Binet test. (2) The t value obtained was 6.85, significant at the 1 per cent level. "The performance of the subjects was significantly better than their performance on the Spanish version of the test. The probable cause of this significant difference is the fact that the level of development of the English language used by the children tested is higher than that of the Spanish language which they use."

On the basis of these findings Keston concluded the following -- (1) The hypothesis that bilingual Spanish-American children of Albuquerque, New Mexico, should be tested for intelligence with a Spanish version of the Stanford-Binet test is rejected. (2) "The Stanford-Binet Intelligence Test depends to a large extent on education and school achievement; for this reason, bilingual children are able to perform better in the language in which they have had their formal instruction." (3) "The development in the use of the Spanish language by these children ceased when they entered grade school and began their formal education in the English language. (4) The range and variability of the English scores were much greater than the range and variability of the Spanish scores. (5) Because the Spanish spoken by these children contains archaisms, contaminations, and Anglicisms, the Spanish translation of the Stanford-Binet Intelligence Test is not suited to the particular cultural background of the children. "This test in the Spanish version is therefore an unfair measure of the children's intellectual abilities." (6) Because the English version of the Stanford-Binet also presents language difficulties, it is an unfair measure of the intellectual abilities of these children. (7) "A translation of the Stanford-Binet test which is adapted to this particular region is necessary."

Kirkpatrick. Kirkpatrick[74] states that "while there is danger of confusing deficiencies in the power aspect of intelligence with a linguistic handicap, yet the improved relative standing of certain groups with the use of a performance test, increased variability under those conditions, a differential performance on reading and arithmetic tests, coefficients of mean-square contingency indicating a relationship between the use of English in the home and test scores, and finally a differential achievement on sub-tests indicating difficulties for the foreign groups on verbal material, led to the conclusion that such a handicap exists."

Klineberg. It was the problem of a study by Klineberg[75] (1) to determine the relationship between bilingualism and intelligence, (2) to determine how important a role the language factor plays "in determining the intelligence of a foreigner as measured by the verbal type of intelligence test."

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[74] Kirkpatrick, C., Intelligence and Immigration, Williams and Wilkins, Baltimore, 1926, 127 pp.

[75] Klineberg, Nettye V., Bilingualism and Intelligence in Ten-Year-Old Italian Girls, Master's Thesis, Columbia University, New York, 1932, 25 pp.

Klineberg found the following -- (1) "Monoglots are reliably superior to bilinguals." (2) "The actual amount of the foreign language spoken in the home is of little consequence." (3) "There is a steady increase in I.Q. with succeeding grades." (4) "Monoglots are reliably superior to bilinguals on the vocabulary test."

He concluded that -- (1) "It is the mental conflict arising out of bilingualism, rather than the actual amount of foreign language spoken, which acts as a handicap when tested by the Verbal Binet Scale." (2) "Italian children with no bilingual handicap do as well as American children of the same social standing." (3) "There is an increasing I.Q. with succeeding school grades, and an increasing percentage of monoglots and decreasing percentage of bilinguals."

Kornhauser. Kornhauser[76] attempted to determine "whether any clear indication would appear of a correlation between intelligence of children, measured crudely by school advancement, and the economic standing of parents." On the basis of his study he concluded the following -- (1) The proportion of school children who are advanced is markedly greater as the district is wealthier (despite the compulsatory tendency of grading). (2) The percentages of the respective class totals having telephones are approximately 19 per cent of the Retarded, 32 per cent of the Normal, and 50 per cent of the Advanced. (3) The percentage of Advanced children coming from homes better situated economically is clearly very considerably greater than the percentage coming from homes that are poorer, and this applies as between the rich and middle class as well as between the extremes. The converse is true of Retarded children.

Langner. It was the problem of Langner's[77] investigation to contrive a valid and reliable instrument of intergroup prejudice which takes account of individual and group differences in values -- Anglo, Spanish, and Indian. The Traits Attribution Test was administered to a sample of 215 school children in grades seven through twelve. The groups included (1) Spanish -- Spanish-speaking or "Mexican" Americans, (2) Anglos -- white Protestants, (3) American Indian. The conclusions of the study were as follows -- (1) There are marked sub-cultural differences in value systems. (2) The trait-attribution method of testing prejudice is valid within certain broad limits, especially as ascertained by means of sociometric and observational materials.

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[76] Kornhauser, Arthur W., "The Economic Standing of Parents and the Intelligence of Their Children," The Journal of Educational Psychology, 9:159:164, March, 1918.

[77] Langner, Thomas S., "A Test of Intergroup Prejudice Which Takes Account of Individual and Group Differences in Values," Journal of Abnormal and Social Psychology, 48:548-554, October, 1953.

Lasker. It was the problem of a research study by Lasker[78] to disclose the roots of social disharmony in the area of race attitudes. Lasker made the following conclusions -- (1) The child of poor immigrant parents may be already out of school and at work when his native American chum absorbs the social idealism of a teacher who disposes him toward a deliberate seeking of friendships that bridge both class and race. (2) Forms of segregation, even when they are an established part of the folkways and therefore rarely discussed, leave a deep impression upon those whose attitudes toward other races and classes are formed in their shadow. (3) Race attitudes in children, in so far as they are regarded as prejudicial to the social peace or to a realistic grappling with the problems of race relations, or whatever may be looked upon as a desirable social goal, must be modified, if modified they can be, in childhood -- and wherever possible at the very time of their first appearance or observation.

Leopold. It is the problem of these studies by Leopold[79,80,81,82] to contrive "a careful record of one child's speech development, much more detailed than has ever been attempted before."

In his statement of procedures, Leopold identifies the following -- (1) Hildegard Rose Leopold was born on July 3, 1930, in Milwaukee, Wisconsin. Her father, the author of this study, was born in 1896 in London, England, of German parents who resided in London for a few years. He was taught German primarily, which was the only language used in the family. Her mother had spent practically all her life in Milwaukee, from 1919 to 1929 as a grade school and high school teacher, with English as her major subject; she had a normal school and college education (Ph.B. degree). (2) Hildegard was constantly exposed to both languages; her father spoke to her from the very beginning exclusively in German and adhered to this principle with rigidity; the mother spoke English always, but had somewhat of an inclination to use certain German words which the child had learned. The parents spoke to each other regularly each in his own language. The remaining environment, including servants, spoke English. German-speaking visitors, in spite of requests to speak German to her, would always fall into English as soon as the child's speech was predominantly English. Obviously, the position of

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[78] Lasker, Bruno, Race Attitudes in Children, Holt, New York, 394 pp.

[79] Leopold, Werner F., Speech Development of a Bilingual Child, A Linguist's Record, Volume I, Vocabulary Growth in the First Two Years, Northwestern University, Evanston, 1939, 188 pp.

[80] Ibid., Volume II, Sound-Learning in the First Two Years, Northwestern University, 1947, 295 pp.

[81] Ibid., Volume III, Grammar and General Problems, Northwestern University, Evanston, 1949, 200 pp.

[82] Ibid., Volume IV, Diary from Age 2, Northwestern University Press, Evanston, 1949, 176 pp.

English was under these circumstances much stronger than that of German. (3) A diary was kept uninterruptedly from the child's eighth week on, in great detail until the end of the seventh year; thereafter only striking features were recorded. The observations were written down as they were made, usually in daily entries.

The findings of the study were as follows:

1. Mortality Statistics. Proceeding to the analysis of the count at the end of the second year, the 377 words which had been used (counting recurrences), 136, or 36%, were inactive by E 1;11.

The distribution of words over the three groups is shown in the following table;

	German	German-English	English
All words used (377)	28%	21%	52%
Active words E 1;11 (241)	18%	19%	63%
Inactive words E 1;11 (136)	45%	24%	32%

Taking each group by itself, we find the following percentages:

Permanent words in each group	41%	59%	78%
Non-permanent words in each group	59%	41%	22%

These figures indicate two important facts: 1) There was a considerable mortality in early words, and the number of words used at some time during the first two years was much larger than the number of words which survived in active use to the end of the period; 2) the mortality was large among German words, small among English words, whereas those words which found support both in German and in English prototypes were better balanced.

2. Linguistic Components. The ratio between the three linguistic components shows much less predominance of English over German than the mortality figures. That is due to the fact that in the earlier stages German was more powerful than later, and this condition left traces in the total figures. The following approximate percentage distribution of words over the three groups:

Stage	Number of active words	German	German-English	English
E 1;3	23	39%	52%	9%
E 1;6	74	27%	32%	40%
E 1;8	123	25%	30%	44%
E 1;10	169	20%	22%	58%
E 1;11	241	18%	19%	63%

On the basis of his findings Leopold concluded the following: (1) "Early bilingualism has the advantage that it trains the child to think instead of merely speaking half mechanically." (2) "A monolingual develops, through the compelling influence of his single language, a simpler and therefore more forceful view of the world." There are "difficulties inherent in growth nourished from a split root instead of a single strong tap root. It will lead to conflicts, which can wreck a weak personality, but will improve the mettle of a strong one, who can overcome the difficulties. The difference is the same as between a highly educated and an uneducated person. Ignorance and superstition make the decisions of life simple. Education does not make life easier, but better and richer. Few would condemn education for this reason. Bilingualism should be seen in the same light."

Lester. It was the problem of Lester's[83] study to determine how to measure the intelligence of foreign children. On the basis of her research she concluded that -- (1) "Certain performance tests apparently resemble the Binet Test more closely than do others (in our study the Mare and Foal and the Kohs Block test), and in working in groups of foreign children this must be kept in mind." (2) "Some performance tests, the Healy Form Board and the Knox Cube Test, were found in the group studied to correlate better with teachers' estimates than did others." (3) "In classifying the children of foreign parents it would seem more practical to combine performance tests with Binet tests, though here it would be more desirable to combine selected performance tests (those least resembling the Binet tests).

Lorge. Lorge[84] studies the relative ability of foreign students with different language backgrounds to master various aspects of English. He concluded that (1) Each language group has its own areas of strength and weakness. (2) Some language groups are favored on English vocabulary tests. (3) Evidence is available for use by teachers concerning the kinds of difficulties a particular language group is likely to experience. (For example, the Spanish-speaking group seems to perform less well in the category on pronouns and the category on correct tense. English instructors of Spanish-speaking students should try to provide successful and satisfactory learning experiences in these areas.)

Mackey. It was the problem of a study by Mackey[85] to determine the following -- (1) The level of general English at which foreigners can start school subjects. (2) The quickest and most effective way to start teaching in this level. Mackey's findings were as follows -- (1) Some pupils could be started after as few as 15 hours of English; others required 35 hours. (2) Some pupils could be started at a general vocabulary level as low as 132 words; for other pupils 370 words were needed. (3) From these levels it was possible to proceed to higher and higher levels at the same rate as the learner's knowledge of the language. (4) After from 15 to 35 hours of second language teaching, school subjects can be taught in the second language as clearly as in the mother tongue, and with no significant increase in teaching time, providing the following are maintained -- (a) The second language taught as a basis for teaching the school subjects be divided into levels which are themselves systems of language with a definite semantic range. (b) The semantic, lexical, and structural elements of each level are those with the minimum learning load and a maximum range. (c) Each level includes the previous levels, and the new elements combine readily with the elements of previous lessons.

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[83] Lester, Olive P., "Performance Tests and Foreign Children," The Journal of Educational Psychology, 20:303-309, April, 1929.

[84] Lorge, Irving, and Diamond, Lorraine Kruglov, "The English Proficiency of Foreign Students: Judged by the Records of Students with Different Linguistic Backgrounds," The Journal of Higher Education, 25:19-26, January, 1954.

[85] Mackey, William F., and Noonan, James A., "An Experiment in Bilingual Education," English Language Teaching, 6:125-132, Summer, 1952.

Maller. It was the problem of Maller's[86] research study to determine the birth rate, death rate, infant mortality, juvenile delinquency, intelligence, school progress, attendance, and the proportion of foreign born, to determine the status of each area with respect to these measures, and to compute and analyze the various inter-correlations of them.

Maller's findings were as follows -- (1) There were marked national differences in each of the measures. An analysis of the differences between two national groups, the Italians and the Jews, showed that the Jews were strikingly superior to the Italians on each of the measures and indices. (2) The health areas into which New York City is divided differ enormously from one another in each of the variables studied. The city may well be considered as composed of 310 small communities with a population of 310,000 each. (3) The factors included in the study show a marked degree of inter-correlation. Desirable characteristics seem to go together. Areas that excel in "vitality" tend also to excel in intelligence and scholastic attainment and social adjustment. (4) There seems to be evidence of a general factor common to the various factors, measures and indices. This factor represents the developmental status of respective groups residing in the various areas. The measures that correlate highest with this common factor are those of social adjustment (based on rate of juvenile delinquency), mental ability (based on psychological tests and school progress), and the measures of vital statistics. The measure of regularity of school attendance shows the lowest correlation with the common factor. (5) The respective areas of the city have population units quite homogeneous in physical, mental, and social characteristics.

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[86] Maller, J. B., "Vital Indices and Their Relation to Psychological and Social Factors: A Study of the 310 Health Areas of New York City with Reference to Birth Rate, Death Rate, Juvenile Delinquency, School Progress, and Intelligence," Human Biology, 5:94-121, 1933.

Manuel. It was the problem of Manuel's[87] investigation (1) "to compare a group of Spanish-speaking school children and a group of English-speaking school children with special reference to ability in reading and arithmetic, the two subjects which perhaps more than any others determine progress through the elementary grades," and (2) "not only to reveal differences in the two groups but also to add to that accumulating body of scientific data which must be gathered before the abilities and difficulties of Spanish-speaking children are fully understood." The New Stanford Reading and Arithmetic Tests were given to Spanish-speaking (Mexican) children and English-speaking children in schools of the Lower Rio Grande Valley in Texas.

Manuel established the following findings -- (1) Grade for grade, the Spanish-speaking pupils are from 1.6 years to 2.9 years older than the English-speaking pupils. (2) Both groups of children are above the grade norms in the second grade and below in grades above the fifth, thus losing their initial superiority. (3) The average score of the Spanish-speaking children is greater than that of the English-speaking children in the second grade in both reading and arithmetic; greater also in the third, fourth, and sixth grades in arithmetic, but less in reading in every grade except the second. (4) The Spanish-speaking children are on the average about a year lower in reading than in arithmetic. ("This condition is interpreted as evidence of a serious and persistent language handicap.") (5) A much larger percentage of Spanish-speaking than of English-speaking children have parents classified as unskilled laborers (57 per cent and 20 per cent, respectively). In both groups there was evidence of a positive relationship between socio-economic level and achievement in reading and arithmetic. (6) On the whole, the Spanish-speaking children make scores about one-fourth of a year lower in paragraph meaning than in word meaning. (7) Both groups do slightly better in arithmetical reasoning than in arithmetical computation. (8) Between the fall and spring tests the Spanish-speaking children gain on the average less than the English-speaking children in reading but nearly as much as the English-speaking children in arithmetic. (9) There is less gain in reading in the middle grades than in the first two or three grades. (10) The variability of scores in both the Spanish-speaking and the English-speaking groups is large.

On the basis of his research Manual concluded, "There is no doubt that the average Spanish-speaking child suffers a serious and persistent language handicap at least as high as the eighth grade."

Manuel. It was the problem of this investigation by Manuel[88] (1) "to contribute to an evaluation of the Stanford-Binet test as a measure of Mexican school children, especially from the standpoint of the language in which the test is given," and (2) "to throw further light upon the abilities of these children." The Stanford-Binet was translated into Spanish, and both Spanish and English editions were applied to 98 children of grades 2 to 5 of a school attended by Spanish-speaking (Mexican) children in San Antonio.

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[87] Manuel, Herschel T., "A Comparison of Spanish-Speaking and English-Speaking Children in Reading and Arithmetic," Journal of Applied Psychology, 19:189-202, April, 1935.

[88] Manuel, Herschel T., Spanish and English Editions of the Stanford-Binet in Relation to the Abilities of Mexican Children, Bulletin Number 3532, University of Texas, Austin, 1935, 63 pp.

Manuel established the following -- (1) A Spanish translation of the Stanford-Binet can be used to advantage in the prediction of the achievement of Spanish-speaking pupils in the first and second grades, but used alone it is inadequate for individual prognosis. (2) A Spanish vocabulary test adapted to the age and experience of the pupils tested would be of high prognostic value. (3) "The peculiar language experiences of these bilingual children result in a handicap which persists for an undetermined period and is difficult to evaluate in individual cases. It is probable that, in the first few grades at least, the handicap is a dual one, in the sense that these children have no adequate language tool in either Spanish or English." (4) Apparently either the school is a selective agency weeding out some of the lower I.Q.'s with advance in grade, or else factors associated with school experience tend to increase the I.Q. in the first two or three grades. (5) The low mean intelligence and achievement of Mexican pupils is associated with a low mean socio-economic status, but the correlation within the group is low. (6) An accurate prediction of the success of an individual pupil can not be made on the basis of social status. (7) There is every reason to believe that the removal of language and environmental handicaps would be accompanied by a significant rise in the scores of both intelligence and achievement tests.

Manuel. It was the problem of this study by Manuel[89] to identify the characteristics of the Mexican population of Texas. The main sources of data were (1) reports of the U.S. census, (2) The Public School Directory of the Texas State Department of Education, (3) scholastic census rolls in the files of the State Department of Education, (4) a special report by the Department, (5) reports of the Commissioner-General of Immigration, (6)records of the State Department of Health, (7) records of the State Comptroller.

Manuel found the following -- (1) Mexicans constitute 1.2 per cent of the total United States population. (2) Of a total of 19 per cent foreign white stock (first and second generations) about 12 per cent is Mexican. Nearly 15 per cent of the total population is of negro stock. (3) The total number of English-speaking persons include 81.1 per cent of the Texas population, Spanish-speaking 15.2 per cent, German-speaking 1.5 per cent, Czech-speaking 1.2 per cent. (4) There are about 200,000 Mexican children and 250,000 colored children (13.3 and 16.5 per cent, respectively) of school age in Texas. (5) The total Mexican population is 790,000. The home language of 97 per cent of these is still Spanish. (6) Texas has an illiteracy rate of 6.8 per cent. It is as high as 25 per cent in some counties, especially those having large Mexican populations.

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[89] Manuel, Herschel T., "The Mexican Population of Texas," Southwestern Social Science Quarterly, 15:29-51, June, 1934.

Manuel and Hughes. Manuel and Hughes[90] attempted to determine the relationship between intelligence and drawing ability of young Mexican children.

The study was based on the Goodenough Intelligence Test, which requires only the drawing of a man. Drawings were selected by a process of sampling from about 12,000 made by the white children in the first four grades of the San Antonio Public Schools, 440 for the Mexican and 396 for the non-Mexican children. The Goodenough test was used in the usual quantitative way to determine an index of each child's mental development. In addition to this, however, the drawings were examined from the standpoint of quality by a teacher of drawing on the basis of the Thorndike Scale. Thus, the drawings were used both for intelligence ratings and drawing scores. The investigators found the following -- (1) The coefficients of correlation between the Thorndike (drawing) and the Goodenough (intelligence) scores were "remarkably high, ranging from .63 to .86." (2) In the comparison of Mexican and non-Mexican children it was evident that the Mexican children were "retarded greatly, being from a year to two years and four months older grade for grade." (3) The relationship between intelligence and drawing ability decreased with each advance in school grade for both the Mexican and non-Mexican children. (4) The average ability of the Mexican children both in intelligence and in drawing compared "favorably, grade for grade, with that of other children." (5) A comparison by ages, however, was less favorable. At each level of age (7 to 10) the Mexican children had lower scores both in drawing and intelligence. In intelligence the difference was equivalent to about a year of mental age.

According to Manuel and Hughes, "The belief among many observers that Mexican children are gifted in drawing and handwork is not supported by a comparison of the scores at any age level."

Manuel and Wright. It was the problem of a study by Manuel and Wright[91] to devise two parallel intelligence tests -- one in English, one in Spanish. In the pursuit of this problem the investigators found (1) The Mexican students have a much better rating in the Spanish tests than others of the same grade. (2) In every grade the English-speaking students make higher average scores on the English test than do the Spanish-speaking students. (3) The English-speaking students achieve scores on the English test having a higher numerical value than their scores on the Spanish test.

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[90] Manuel, Herschel T., and Hughes, Lois S., "The Intelligence and Drawing Ability of Young Mexican Children," Journal of Applied Psychology, 16:382-387, August, 1932.

[91] Manuel, Herschel T., and Wright, Carrie E., "The Language Difficulty of Mexican Children," Pedagogical Seminary and Journal of Genetic Psychology, 36:458-466, June, 1929.

Manuel and Wright. In this study by Manuel and Wright,[92] two forms of a well-standardized test of reading were translated from English to Spanish. The Spanish translation was a test of satisfactory reliability, but of unknown difficulty. The investigators concluded (1) The Mexican children as a group have less reading ability in any language than the English-speaking students. (This might be interpreted either as an indication of a lower native capacity or as evidence of a dual language handicap.) (2) Mexican students as a group read as well in English as in Spanish, or perhaps better.

Marshall and Phillips. It was the problem of study by Marshall and Phillips[93] to determine the effect of bilingualism upon college grades. Forty college students, drawn from all four classes, who were capable of speaking and understanding another language in addition to English were paired with forty students who possessed facility in English only. Pairing was done on the bases of college class, score in the American Psychological Examination given at entrance to college and score on the Shepard English Test given at entrance to college. Eleven different languages were represented by the bilingual group. The record of all grades of all eighty students was then obtained and the means and standard deviations for both groups computed.

The findings of the study were as follows:

		Bilinguals	Monolinguals
Number		40.	40.
Psychological Examination	Mean	98.9	101.9
	S.D.	33.4	
Shepard English Test	Mean	86.8	85.0
	S.D.	19.6	18.0
College Grades	Mean	1.90	1.93
	S.D.	.707	.717
	Range	.70-3.24	.71-3.56

It was the conclusion of the investigators "that bilingualism does not affect success in college."

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[92] Manuel, Herschel T., and Wright, Carrie E., "The Language Difficulty of Mexican Children," The Journal of Genetic Psychology, 36:458-466, September, 1929.

[93] Marshall, M. V., and Phillips, R. H., "The Effect of Bilingualism upon College Grades," Journal of Educational Research, 36:131-132, October, 1942.

McCamman. It was the problem of McCamman's[94] study to determine the attitudes of children in the intermediate grades toward Mexicans and to determine how they obtained these attitudes. An attempt was made to tabulate the statements made by the children according to the source of opinion, with the following secondary classification -- (a) entirely favorable, (b) both favorable and unfavorable, and (c) entirely unfavorable.

The summary of expressions and opinions of 368 elementary school children regarding Mexicans was as follows:

1. No expression -- 6 per cent.
2. Facts only -- 16 per cent.
3. Favorable opinions -- 33 per cent.
4. Favorable and unfavorable -- 27 per cent.
5. Unfavorable opinions -- 18 per cent.

Sources of information concerning Mexicans included knowing Mexicans, reading books, seeing movies, radio, Sunday-School, hearsay.

McWilliams. It was the problem of the research study by McWilliams[95] to determine the social consequences of migratory farm employment. The social consequences of migratory farm employment were identified as the following -- (1) California is the home of vigilantism. (2) Race riots, armed at various alien groups which the farm industrialists have imported to California, have been a frequent occurrence. (3) The various racial farm-labor groups in California have not led well-adjusted lives while laboring in the fields. (4) Even among those foreign groups that have acquired a foothold in the agricultural districts, it is significant that land tenancy has risen with their presence. (5) California farm industrialists have always justified their employment of alien labor on the ground that, with particular reference to the Mexican, migratory labor left the State after the harvest season and, therefore, presented no social problem.

Mead. It was the problem of Mead's[96] study to investigate the effect upon group intelligence test scores of linguistic disability, as expressed in the language spoken in the homes of children. Mead concluded the following -- (1) Italians are definitely inferior in performance to the Americans if judged by the test showing alone. (2) The scores of Italian children are influenced by the following: (a) The language factor as demonstrated by the classification according to language spoken at home. (b) The social status factor and the length of time the father has been in the country, this last factor being somewhat interwoven with the language factor. (3) Classification of foreign children in schools where they have to compete with American children, on the basis of group intelligence test findings alone, is not a just evaluation of the child's innate capacity.

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[94] McCamman, Eleanore L., "A Study of Children's Attitudes Toward Mexicans," California Journal of Elementary Education, 5:119-128, November, 1936.

[95] McWilliams, Carey, Factories in the Field: The Story of Migratory Farm Labor in California, Little, Brown and Company, Boston, 1939, 334 pp.

[96] Mead, Margaret, "Group Intelligence Tests and Linguistic Disability among Italian Children," School and Society, 25:465-468, April 16, 1927.

__Meltzer__. It was the problem of Meltzer's[97] study to determine the race and nationality attitudes of children "when seen from the point of view of emphasis on emotional responsiveness." On the basis of his study he concluded -- (1) Children are markedly pro-English. (2) Children are more tolerant and less nationalistic than adults. (3) The most preferred nations of children in order of rank are America, England, France, Ireland, Germany, and so on. (4) The least preferred nationalities or races, from lowest up, are Russian, Jew, and Mexican. (5) The climate of opinion in family and neighborhood seem to be the chief contributing factors which determine the direction and distance of race and nationality preferences expressed by groups of children.

__Meriam__. It was the problem of this study by Meriam[98] to determine successful practices in the teaching of English to bilingual children. It was the procedure of this study to collect, organize, and present data already available from the La Jolla School for Mexican children in California.

Meriam concluded the following on the basis of his study -- (1) Racial backgrounds affect the social status. (2) The Mexican in America is handicapped. (3) The Mexican child in the American school is usually retarded. (4) "The best way to teach English is not to teach English in the form of reading, writing, language, spelling, and so on, but to proceed vigorously to read for enjoyment or for needed information, to write with great care when there is a real occasion for doing so, to speak with more and more carefully chosen language when such oral expression definitely functions. English at its very best is of value as it functions. __Bilingual children acquire English incidentally__."

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[97] Meltzer, H., "Educating Children for Race and Nationality Tolerance," __Educational Administration and Supervision__, 26:19-35, January, 1940.

[98] Meriam, J. L., __Learning English Incidentally__: __A Study of Bilingual Children__, Bulletin 1937, Number 15, Project in Research in Universities, Office of Education, United States Government Printing Office, Washington, D. C., 1938, 105 pp.

__Mitchell__. It was the problem of Mitchell's[99] study "to determine whether Spanish-speaking children do as well on an intelligence test administered to them in the English language as they would do on a similar test administered to them in their native language."

The Otis Group Intelligence Scale, Primary Examination, suited for use in the first three grades, was administered to 295 children, both in an English and a Spanish version. Ten days intervened between the administration of Form A and Form B. All the children in the universe were of Mexican parentage.

The mean difference in the intelligence quotients obtained as a result of testing in the child's native language and testing in English was 9.8 in favor of the Spanish translation. The mean difference between the intelligence quotients secured from the Spanish and the English testings for all grades was found to be 13.22 points, with a range of 44 points.

Mitchell concluded that (1) "Bilingual children work under a serious handicap, especially in earlier years, in American schools." (2) " . . . an intelligence test administered in the English language to foreign-language-speaking children is not a fair test of the intelligence of such children."

__Murdoch__. It was the problem of this study by Murdoch[100] to ascertain differences between races in intellect and morality. Murdoch found that -- (1) Anglo-Saxons clearly excel all the other races in general intelligence measures, except the Orientals. (2) The distinction is not so marked in non-verbal tests; the Japanese particularly show up well in these. (3) Japanese subjects excel the Chinese in both measures on non-verbal intelligence, but are excelled by them in measures of verbal intelligence.

__Murdoch__, __Maddow__, __and Berg__. It was the problem of this study by Murdoch, Maddow, and Berg[101] to determine what relation, if any, exists between innate intelligence and the amount of English spoken in the homes of a group of school children of foreign-born parentage. One-hundred-and-forty-nine Jewish girls in New York City were included in the study. It was found that -- (1) In the case of Jewish families in New York City who have been in the United States at least three years, inherited mental ability is to some degree at least reflected in the extent to which a family speaks English at home. (2) Standard verbal tests when applied to Jewish children of foreign-born parentage who have reached Grade VII-A in school are valid measures of intelligence.

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[99] Mitchell, A. J., "The Effect of Bilingualism in the Measurement of Intelligence," __The Elementary School Journal__, 38:29-37, September, 1937.

[100] Murdoch, Katherine, "A Study of Differences Found between Races in Intellect and Morality," __School and Society__, 22:628-632, plus, November 14, 1925.

[101] Murdoch, Katharine; Maddow, Doris; and Berg, Nettie Lesser, "A Study of the Relation Between Intelligence and the Acquisition of English, __The Twenty-Seventh Yearbook of the National Society for the Study of Education__, pp. 343-353, Nature and Nurture, Part I, Their Influence Upon Intelligence, Public School Publishing Company, Bloomington, Illinois, 1928.

Neff. It was the problem of the study by Neff[102] "to examine the precise character of the relationship between socio-economic status and intelligence as it is treated in the research literature," to "evaluate the techniques which have been used in the study of the problem," and to "interpret the relationship on the basis of all the evidence bearing upon it." Neff concluded that, "Standard intelligence tests are inadequate instruments for measuring the native ability of different races and . . . can not be used for measuring the capacity of different social levels within our own society."

Overn and Stubbins. It was the problem of the study by Overn and Stubbins[103] to determine whether children of immigrants begin school with intellectual handicaps or whether they have "language difficulties simply due to the use of a foreign language regularly in their home environments."

The first grade of the Mott Elementary School, Hettinger County, North Dakota, was divided according to the home language environment of the pupils. Twenty-two native American children constituted a control group, and eighteen from foreign language speaking homes were placed in an experimental room. The experimental room was in charge of a special teacher who used a procedure designed to overcome the language handicap as quickly as possible.

On the Pintner-Cunningham Primary Mental Test the experimental group had an average of 1.2 of 87 and the others of 106 on November 20. On the Metropolitan Achievement Tests the experimental group tested lower than the control group by three months in reading and one month in arithmetic on May 20. The experimental group indicated an average grade equivalent of 2.4 and the control group of 2.6. The superiority of the control group was no longer significant. The investigators concluded that, "The stimulation of the teachers, pupils, and possibly the parents of the children from foreign language speaking homes, which was brought about by the organization and procedures of the experiment, aided the latter to overcome their language difficultier to an appreciable extent."

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[102] Neff, Walter S., "Socioeconomic Status and Intelligence," The Psychological Bulletin, 35:727-757, December, 1938.

[103] Overn, A. V., and Stubbins, D. G., "Scholastic Difficulties of the Children of Immigrants," Journal of Educational Research, 31:278-280, December, 1937.

Peck and Hodges. It was the problem of the study by Peck and Hodges[104] to determine the incidence of eidetic ability in White, Mexican, and Negro children. The subjects used in the study were 208 white children, 50 Mexican children, and 50 Negro children from 3 to 6 years of age. All the subjects, with the exception of a small number of white children, were members of the same locality -- Austin, Texas. The investigators concluded that -- (1) There are racial differences in eidetic ability of pre-school children. (2) Negro children possess a higher eidetic ability than the White and Mexican children. (3) Mexican children possess a slightly higher eidetic ability than the White children.

Pintner and Arsenian. It was the problem of the study by Pintner and Arsenian[105] to determine (a) the relation between bilingualism to verbal intelligence (b) the relation between bilingualism with school adjustment.

Four hundred and sixty-nine Jewish children, all native born and coming from the same metropolitan neighborhood were the subjects in the study. These children were in grades six and seven of Public School Number 16, Brooklyn, New York. Yiddish or Hebrew was heard and spoken by the children at home, English at their school.

The instruments of the study included the following -- (1) The Hoffman Bilingual Schedule was used for the measurement of bilingual status. (2) The Pintner Intelligence Test, Form A, was used for the measurement of intelligence. (3) The Sims Socio-Economic Score Card was used to determine socio-economic status. (4) The Pupil Portraits Test, Form A, was used for the measurement of school adjustment.

The findings included the following -- (1) The Pearson Product-Moment coefficient of correlation in the population between bilingualism measured by the Hoffman Schedule and the raw score on the Pintner Intelligence Test was -- .059 with a Probable Error of .031. (2) When by means of the partial correlation technique the age factor was held constant the correlation of -- .059 remained unchanged. (3) When the factor of the socio-economic status was held constant by the same technique the correlation between the bilingual status and the intelligence scores was reduced to a correlation of -- .029. (4) The Pearson Product-Moment coefficient of correlation in the population between bilingualism measured by the Hoffman Scale and the ratings on the Pupil Portraits were as follows:

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[104] Peck, Leigh, and Hodges, Amelia Barthlome, "A Study of Racial Differences in Eidetic Imagery of Pre-School Children," The Journal of Genetic Psychology, 51:141-161, September, 1937.

[105] Pintner, Rudolf, and Arsenian, Seth, "The Relation of Bilingualism to Verbal Intelligence and School Adjustment," Journal of Educational Research, 31:255-263, December, 1937.

Between Bilingual Score and		r	P.E.
Part I,	Pupil-School	-.0142	.031
Part II,	Pupil-Teacher	-.0004	.031
Part III,	Pupil-Pupil	-.0940	.030
Part IV,	Pupil-Self	-.0500	.031
Part V,	Pupil-Family	-.0660	.030
Total Test		-.0750	.030

The investigators concluded "that bilingualism . . . bears no relation to verbal intelligence and school adjustment."

Powers and Hetzler. It was the purpose of the study by Powers and Hetzler[106] (1) "to gather information on successful methods of teaching English to bilingual children," (2) "to evaluate the organization of a school for special work of this type," (3) "to analyze the psychological factors involved in the learning of bilinguals," (4) "to formulate a good bibliography on the subject."

The procedure adopted for the study was that of observation and conference. Three "foreign classes" of the Pacific School in Seattle were studied; they included the elementary class with children from 9 to 14 years old, the receiving class with pupils over 14 years of age, and the high-school preparation class.

The investigators concluded that -- (1) The foreign classes aim to give special instruction according to the nationality of the pupils. (2) Frequent drills on sounds and words are given daily. (3) "Reading occupies about two-thirds the time and conversation plays a very important part." (4) All papers are corrected at least once daily and returned to pupils with corrections explained. (5) Special attention is given in all classes to phonics and voice training. (6) Reading material in all grades contributes as far as possible to an understanding of American life and ideals. (7) There is much individual work. (8) The system of making oral reports upon the reading lesson, stories told by the teacher, and current events, is of considerable value and is used in all foreign rooms.

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[106] Powers, Francis F., and Hetzler, Marjorie, Successful Methods of Teaching English to Bilingual Children in Seattle Public Schools, United States Department of Interior, Office of Education Pamphlet Number 76, United States Government Printing Office, 1937, 17 pp.

Raley. It was the problem of the study by Raley[107] to show the relationship of scores on Spanish and English Editions of the Cooperative Inter-American Tests. The correlations of scores on the Spanish and English Editions of the Reading Tests were as follows -- (1) Vocabulary -- Spanish 612a = .36, Spanish 612b = .50. (2) Comprehension -- Spanish 612a = .61, Spanish 612b = .57. (3) Total Score -- Spanish 612a = .59, Spanish 612b = .59.

Rodriquez-Bou. The Inter-American Tests of General Ability and The Inter-American Tests of Language, in their English and Spanish editions, are designed to be parallel in content and difficulty. The specific problem of the study by Rodriquez-Bou[108] was to evaluate the parallelism of the intermediate and advanced vocabulary tests.

Four main techniques of evaluation of the parallelism were used -- (1) A study of conceptual level, showing whether the words in English and Spanish express the same fundamental concepts. (2) A comparison of the frequency of use of the English words and their Spanish equivalents. (3) A study of dictionary meanings of the English and Spanish words to determine the extent of communality or overlapping of meanings used in the tests. (4) Analysis of the responses made by pupils to corresponding items in English and Spanish editions of the tests.

Rodriquez-Bou concluded that, "The evidence tends to show that the test construction staff has been reasonably successful in its attempt to approximate the goal of building tests in English and Spanish which are parallel in content and difficulty and to support the claim that 'there are certain common fundamental concepts which on the average are of approximately equal difficulty in Spanish and English, and that words and sentence structure of approximately equal difficulty in the two languages may be found to express these concepts.'"

Rojas. It was the problem of the study by Rojas[109] "to discover why reading materials prepared for native English-speaking children are unsatisfactory for teaching reading in English to bilingual children." The study analyzed the vocabulary content of the preprimers and primers of the Basic Readers: Curriculum Foundation Series, The Children's Own Readers, and The Happy Road to Reading, "all of which are typical of the materials used with Spanish-speaking children." The words were listed in the order of their appearance, and all the variations in form and meaning judged to constitute a source of difficulty for the Spanish-speaking child were recorded.

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[107] Raley, Coleman L., A Study of Two Inter-American Tests at the Upper Elementary and Junior High School Levels, Master's Thesis, The University of Texas, Austin, 1951, 63 pp.

[108] Rodriquez-Bou, Ismael, A Study of the Parallelism of English and Spanish Vocabularies, University of Texas, Austin, 1944, 294 pp.

[109] Rojas, Pauline M., "Reading Materials for Bilingual Children," The Elementary School Journal, 41:204-122, December, 1946.

Rojas found that ". . . the materials designed for teaching reading to children whose vernacular is English are highly unsuitable for use with Spanish-speaking children, and probably equally unsuitable for use with all bilingual children."

Special materials, she recommended, should be prepared for bilingual children. (1) In addition to giving attention to the number and kind of words used and to the frequency of their repetition, meanings and forms should be stressed. (2) The materials should be set up in such a way that they will provide a maximum of practice on the essential features of English from the standpoint of both sound and grammatical structure. (3) They must provide the pupil with opportunity to learn how to manipulate English words in the structural patterns characteristic of the language. (4) They must also enable him to learn to recognize the sounds used in English in distinguishing meanings.

By way of interpretation, Rojas stated that -- (1) By the time the child knows enough English to read a given book, he has passed the age when its subject matter appeals to him. (2) The cultural background reflected in materials prepared for native English-speaking children is often unfamiliar to Spanish-speaking children and, therefore, not meaningful to them. (3) Vocabulary difficulties prevail for pupils whose experience with English is limited.

Saer. It was the problem of the study by Saer[110] to determine the effect of bilingualism upon the intelligence of young children. The inquiry was conducted in seven districts in West Wales and involved 258 children seven to twelve years old who spoke both Welsh and English. Saer found that -- (1) In rhythm exercises, when speech organs are used, the curve for monoglot children was consistently higher than that for the bilingual children. (2) The percentage of children eight to twelve years old who consistently showed a reversal in their sense of right and left three times in a simple exercise was over three times as high in the case of children who had a comprehension of more than one language as it was with monoglot children in the same districts. (3) The monoglot children were superior to the bilingual children in range of vocabulary.

Saer. It was the problem of Saer's[111] study to determine the effects of bilingualism upon intelligence. Saer found that -- (1) A clear superiority of monoglot English-speaking children over bilingual children was found by the Binet-Simon scale of intelligence in rural districts. (2) In rural districts 80 per cent of the monoglot children were found by the scale to be as intelligent as 50 per cent of the bilingual children.

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[110] Saer, D. J., "An Inquiry into the Effect of Bilingualism upon the Intelligence of Young Children, I," The Journal of Experimental Pedagogy, 6:232-240, March 6, 1922.

[111] Saer, D. J., "An Inquiry into the Effect of Bilingualism upon the Intelligence of Young Children," The Journal of Experimental Pedagogy, 6:266-274, December, 1922.

(3) No factor except that of language was discovered which could be suspected of accounting for this difference. (4) "Any disturbing effects that bilingualism may have on the growth of intelligence is not significant in urban children." (5) Mental confusion occurs in bilingual children to a higher degree than in monoglot children in urban and rural districts.

Saer. It was the problem of the study by Saer[112] to investigate the following -- (1) The possibility of discovering through tests the varieties of bilingualism existing within an experimental group. (2) The part played by emotional factors in bilingualism.

The procedure employed was based on the familiar word-association experiments of Jung. The subjects were chosen at random. They attended a secondary school in Llanelly, Carmarthenshire, South Wales. Saer concluded that -- (1) Words of both languages possess effective significance for bilingualists. (2) True bilingualism is apparently not possible in the domain in which one member of the word-pair possesses an effective significance which its fellow does not. (3) Bilinguists can be classified into distinguishable types for separate and intensive investigation.

San Jose Project. The basic research problems in the San Jose Project[113] were as follows -- (1) Is the low school level of the Spanish-speaking child in the elementary schools of New Mexico due to a low intelligence quotient or to poor teaching? (2) Can the intelligence quotient of these children be raised? (3) Do the Spanish-speaking children reach a point of maturity earlier than the English-speaking children? (4) Are there certain methods of instruction which are more efficacious than others in dealing with the Spanish-speaking child? (5) To what extent will methods of instruction devised for English-speaking children need to be modified to fit the Spanish-speaking children?

The procedure included the following -- (1) Tests were administered to San Jose School and also to two control schools in the beginning and end of the first year and at the close of each of the succeeding four years. (2) One of the control schools is located within a few miles of San Jose School at the edge of Albuquerque, New Mexico; the other, some two hundred miles distant in the northern part of the state. (3) The children in the control schools are Spanish-speaking and of the same general cultural background as the San Jose pupils. (4) The number of pupils per teacher was about the same. (5) Control School Number One had exactly the same length of term as San Jose; School Number Two had only eight months. (6) The type of educational program was the large differential factor. (7) In the school program at San Jose School, special emphasis was given "to reading and oral English. To improve reading, extensive room libraries were provided, both of a study and recreatory type. A large amount of teaching aids was provided, such as workbooks, mimeographed sheets, and hectographs. The work in social sciences was considered as one part of the reading program. In a similar way oral English was given enlarged attention. A minimum vocabulary list was selected and every effort was made to help the child to master this before the regular work of the first grade was undertaken. Special techniques were applied, and increased opportunities were provided to practice English throughout the whole school."

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[112] Saer, Hywella, "The Bilingual Problem: An Experimental Inquiry into the Education of Bilingual Peoples," pp. 116-121, Education in a Changing Commonwealth, The New Education Fellowship, Tavistock Square, London, 1931.

[113] The San Jose Project, We Learn English: A Preliminary Report of the Achievement of Spanish-Speaking Pupils in New Mexico, The San Jose Experimental School, University of New Mexico, Albuquerque, 1936, 71 pp.

A comparison of the relative achievements of the three schools showed that San Jose leads with School II second:

1. "San Jose has the greatest amount of outstanding ability. San Jose has the best pupil in the class at or above norm almost twice as often as the other schools. The ratios for the three schools in the order San Jose, School I, and School II are for the Gates 1.7 to 1 to 1 and for the Stanford 2.4 to 1 to 1.9. In regard to the grades having the highest one-fourth of the pupils at or above norm, San Jose leads markedly in the Gates with ratios of 3.3 to 1.6 to 1 and is only slightly surpassed by School II in the Stanford for which the ratios are 2.5 to 1 to 2.98.

2. "The averages of the medians for five years on the Gates show that San Jose keeps above the norm both in Grades 1 and 2. School I is at norm only in Grade 1, and School II is below norm in all grades.

3. "When the schools are compared grade by grade according to the averages of the medians for five years, San Jose is in the lead on the Gates by differences which are large enough to prove that they are real and not chance differences. Schools I and II are almost equally far below San Jose. Their graphs show marked falling off after the third grade, very slow advance up to the seventh grade and somewhat more rapid in the eighth.

4. "Comparison of the averages of medians for five years on the Stanford shows that again San Jose is superior on the whole, although never at norm and in the lead after the second grade by differences which are not statistically reliable until the fifth grade. School II leads only in the second grade, where it is at norm, but almost equals San Jose in the eighth. School II outstrips School I by differences which are statistically reliable from the sixth grade on."

Sanchez. It was the problem of this study by Sanchez[114] to identify some of the abuses and errors made in the use of mental tests. Sanchez found that the fundamental questions in mental tests of bilingual children, are primarily questions of validity -- (1) Do the Tests measure in that particular child what they purport to measure? The tests might be valid for the "average" child and still lack validity for an individual or for a particular group. Questions of culture, schooling, socio-economic status, and so on "loom big in this phase of the problem." (2) Are the assumptions on which the test was based for the original "norm" applicable with equal justice to the particular case? If the use of a radio were assumed to sample intelligence, would a Navajo Indian living in a hogan be equally subject to such an assumption as average children, or would the tallying of sheep be a more desirable measure? Is "intelligence" abstract reasoning, memory, "g," "s," and so on? Whatever it is, are the assumptions of what it is justified universally?

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[114] Sanchez, George I., "Bilingualism and Mental Measures," Journal of Applied Psychology, 18:765-772, December, 1934.

Sanchez. The report by Sanchez[115] states -- (1) In each of the states of the Southwest there exist patterns of segregation, isolation, and discrimination which operate against the welfare of the Spanish-speaking people and the entire community where such patterns exist. (2) School statistics in the Southwest show that whereas as much as thirty per cent of the enrollment in the elementary school grades is Spanish-speaking, this figure drops to below eight per cent in the secondary school and becomes practically non-existent at the college level.

Sanchez. It was the problem of the investigation by Sanchez[116] to review critically those primary researches in the area of group differences and Spanish-speaking children. Sanchez states that without minimizing the value of the studies of the test scores made by Spanish-speaking children, an analysis of procedures, materials, conclusions, and interpretations, however, indicates that in many instances far-reaching suggestions or interpretations have been made without due consideration of this fact -- that the problem of the Spanish-speaking child represents but a sampling of the wider problem of group differences, and that findings in the wider field are inexorably bound up with those for this sampling. Proper accounting for the inferior test results of Spanish-speaking children cannot be made unless it is in terms of the findings for the field in general, for the fundamental causes to which this inferiority may be attributed are not unique or peculiar to Spanish-speaking children but represent influences active upon all.

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[115] Sanchez, George I., First Regional Conference on the Education of Spanish-Speaking People in the Southwest: A Report, Inter-American Education Occasional Papers, 1, The University of Texas Press, Austin, March, 1946, 22 pp.

[116] Sanchez, George I., "Group Differences and Spanish-Speaking Children -- A Critical Review," Journal of Applied Psychology, 16:549-558, October, 1932.

Sanchez. It was the problem of the study by Sanchez[117] to identify and explain certain differences in scores of Spanish-speaking children on repeated tests.

The Stanford Achievement Test (Primary and Advanced), Forms A, B, V, and V (in order named), and the Haggerty Intelligence Test (Delta 1 and Delta 2) were administered to the same group of 45 Spanish-speaking children, Grades 3-8, in the Bernalillo County (New Mexico) Public Schools in December, 1928, April, 1929, November, 1929, and April, 1930.

Some of the findings of the study included the following -- (1) The mean quotients in the various abilities tested are increasingly greater at successive applications of the tests. (2) The increases in mental abilities were largest, with the increases in reading ability next in order. (3) While there is little or no correlation between chronological age and ability as measured by the first tests, the younger children make greater gains on the retests than do the older children. (4) The brightest children have the highest educational quotients on the first test, but on the retests the duller children make greater gains in both mental and educational ability. (5) Though marked correlation is shown between all abilities (first testing), reading correlates most highly with other abilities. (6) Quotients show negative correlations with their changes. On the basis of the study Sanchez concluded that -- (1) To avoid falling into serious error, investigators must take into consideration the conditions under which tests are given, for not only do successive testings at wide intervals apart reveal that significant gains occur in the ability quotients of these children, but the improvement varies by grades, by ages, and by relative brightness of the children. (2) The relation of language ability (as measured by reading tests) to both mental and educational tests offers further room for variations in the interpretation of test results. Failure to consider these factors may seriously impair the value of tests, even to the extent of invalidating results.

Schiller. It was the problem of the study by Schiller[118] to ascertain the following -- (1) Do the sub-tests within a general intelligence battery measure fundamentally the same ability, regardless of the type of test material employed? (2) Within a given category, i. e., verbal, numerical, spatial, and so on, are the test abilities more closely related than they are between categories, so that the existence of independent and differential mental abilities may be demonstrated?

There were 537 children in the third and fourth grades of Public School 225 in the Brighton Beach section of Brooklyn, New York, included in the study.

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[117] Sanchez, George I., "Scores of Spanish-Speaking Children on Repeated Tests," Pedagogical Seminary and Journal of Genetic Psychology, 40:223-231, March, 1932.

[118] Schiller, Belle, "Verbal, Numerical, and Spatial Abilities of Young Children," Archives of Psychology, 161:1-69, March, 1934.

Schiller's findings were as follows -- (1) According to the nature of the child's answers to ten questions on the amount of bilingualism in his extra-school experience, his verbal test scores were placed in one of two categories -- "Mostly English-Speaking" or "Mostly Yiddish-Speaking." Jewish children are not penalized on English verbal tests by being subjected to a greater amount of non-English speech. (2) The average correlation of twelve tests was the same for both sexes. The verbal tests correlated highest among themselves, the numerical tests were intermediate, and the tests of spatial ability showed the lowest correlation inter se. The verbal and numerical tests correlated higher among themselves than the tests of any other two categories.

Seago and Koldin. It was the problem of the study by Seago and Koldin[119] to compare the performance in the National Intelligence Test of Jewish and Italian children of foreign-born parentage. Seago and Koldin established the following -- (1) Differences in mental capacity exist between groups of children of different foreign parentage. (2) It is not established whether this difference is one of language handicap, of general mental capacity, or of specialization of abilities. (3) When in addition to the factors of sex and grade, age is made constant, there is still a reliable difference between the groups in favor of the Jewish group, although the difference is smaller than that found for groups unselected for age.

Seidl. It was the problem of Seidl's[120] study to isolate the effect of bilingualism on the estimate of intelligence obtained by means of two widely used batteries of intelligence tests, one being a verbal test, and the other a non-verbal or performance test.

Two groups of children were selected, the first being monolingual, the second being bilingual. The number of cases was 120 for both groups. Half of each group were boys and half girls. The children were matched by age, sex, socio-economic background, and area. The instruments of the study were (1) The Stanford Revision of the Binet-Simon Scale, and (2) the Arthur Point Scale of Performance Tests. Seidl's conclusions included the following -- (1) "An analysis of the sub-tests of the Stanford-Binet suggests that the superiority of the monolinguals may be in direct proportion to the degree of saturation of the scale with verbal material." (2) Bilingual subjects exceed monolingual subjects on the Arthur Point Scale of Performance Tests. (3) The female subjects exceed the males on verbal materials in both monolingual and bilingual groups, and conversely the males exceed the females on non-verbal materials. (4) "The assumption that the Arthur Scale is acceptable as a substitute for the Stanford-Binet, in the sense of its being used in the same way that an alternative form of the Stanford-Binet would be used, is not justified by the data of this investigation." (5) There is a tendency for children who score low on the Stanford-Binet to earn appreciably higher scores on the Arthur Scale and conversely for the monolingual children scoring high on the Stanford-Binet to receive lower scores on the Arthur Scale.

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[119] Seago, Dorothy Wilson, and Koldin, Theresa Shulkin, "A Comparative Study of the Mental Capacity of Sixth Grade Jewish and Italian Children," School and Society, 22:564-568, October 31, 1925.

[120] Seidl, Julius Carl Gfrorer, The Effect of Bilingualism on Intelligence, Doctor's Dissertation, Fordham University, New York, 1937, 123 pp.

Senour. It was the problem of Senour's[121] study to determine differences in scores on intelligence tests administered to bilingual pupils. All pupils enrolled in 4B grade, 453 altogether, were examined with the Haggerty Intelligence Examination, Delta 2, and with the Pintner Non-Language Mental Test in East Chicago, Illinois, an area including people of recent European, Mexican, and Negro stock as well as some of native white birth.

Senour concluded that -- (1) The Pintner Non-Language Test and the Haggerty Intelligence Examination, Delta 2, as measures of intelligence are influenced by some identical and some non-identical factors. (2) The language used in the homes of pupils tested is one of the non-identical factors. Pupils from homes that use a foreign language tend to get results on the Haggerty Test which indicate lower ability than they evidently possess. (3) The intelligence of pupils in a foreign language community is inadequately represented by the use of results of either of the two tests alone. If only one test is used alone, the Pintner seems to be the better instrument.

Sheldon. It was the problem of Sheldon's[122] study to compare the intelligence quotients of white and Mexican children. Sheldon found that -- (1) The average Mexican child was found to be fourteen months below the normal mental development for white children of the same age and school environment. (2) The Mexicans as a group possessed about 85 per cent of the intelligence of a similar group of white children. (3) Mexican children were found to be less intelligent than American, English, Hebrew, and Chinese children, but more intelligent than Indian, Slavic, Italian, and Negro children. (4) As chronological age increases, these results show that the proportionate difference in mental age between Mexican and white children becomes greater.

Sims. Sims[123] attempted to devise an instrument to measure socio-economic status. Using the population selected from a school system, levels of socio-economic status corresponding to the various percentiles shown were established. By way of example he showed that if a child makes a score of 29.5, his score corresponds to the percentile 94.5 and he ranks among the very highest that were tested in this certain city; if he makes a score of 10, his percentile rank is 50, and he is average for those tested; if he scores 1.8, his percentile rank is 5.5, and he is classed with the lowest of those tested, and so on.

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[121] Senour, A. C., "Necessity for Use of a Non-Language Mental Test in Group Intelligence Testing," Journal of Educational Research, 27:435-441, February, 1934.

[122] Sheldon, W. H., "The Intelligence of Mexican Children," School and Society, 19:139-142, February 2, 1924.

[123] Sims, V. M., The Measurement of Socio-Economic Status, Public School Publishing Company, Bloomington, Illinois, 1928, 33 pp.

Sirkin. It was the problem of Sirkin's[124] study to show the relationship between intelligence, age, and home environment of elementary school children. Sirkin found the following -- (1) The correlation between social status and the intelligence score of pupils belonging to the same grade is of the order of .40. (2) The relation between age and score was negative under the same conditions, the order of correlation being -.26. (3) The correlation decreases to -.20 on the average as the social status becomes more homogeneous. (4) The correlation between score and social status as well as that between score and age does not diminish over a period of fourteen months.

Smith. It was the problem of a study by Smith[125] to determine average sentence length of English, Japanese, Chinese, and Filipino children. Analyses were made of verbatim records of spontaneous conversations of English, Japanese, Chinese, and Filipino children in Hawaii. Smith concluded that -- (1) Bilingual children use shorter sentences not only in English but also in their combined languages than do monolingual children. (2) Unless their home language is predominantly English the children continue to confuse two languages in the same sentence up to school age.

Smith. Smith[126] attempted to determine the sentence length, number of errors per 100 words, number of inflected forms of English words in proportion to the total number of English words used, the percentage of mixed sentences, by which is meant those sentances containing words other than proper nouns from both languages, and finally the percentage of Chinese words used by bilingual children. The records of the speech of the bilingual children was separated according to the age of the child at the time of the record, all sentences spoken between the ages of 21 months 0 days and 26 months 29 days being counted as spoken at 24 months and so on for each six-month interval. In order to isolate the factors operating on the children to a different extent, the material was considered separately for the three oldest and five youngest children and also for each of the three children who moved from a bilingual to a monolingual environment or vice versa before they were past three years old.

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[124] Sirkin, M., "The Relation between Intelligence, Age, and Home Environment of Elementary School Pupils," School and Society, 30:304-308, August 31, 1929.

[125] Smith, Madorah E., "A Study of Language Development in Bilingual Children in Hawaii," Psychological Bulletin, 30:692-693, November, 1933.

[126] Smith, Madorah E., "A Study of the Speech of Eight Bilingual Children of the Same Family," Child Development, 6:19-25, March, 1936.

On the basis of her study Smith concluded -- (1) "It is probably better for young bilingual children to receive their two languages from quite separate sources, each adult in the home using always the same language in speaking to them." (2) Change from a monolingual environment to a bilingual one affects a child's speech more than a change in the opposite direction. (3) Such changes are more difficult for an infant of twelve to eighteen months than for those who have already made more progress in speech. (4) A bilingual environment does not seem to delay the first use of words, the handicap operating at a later age. (5) "Although the numerical data cannot be compared with other studies of children's speech since the samples are probably selections of the children's best effort rather than of their average performance, yet the ratio of errors is in case of the younger children higher than the norms of two and three-year-olds found in Smith's previous study, two years 36 and three years 15 per 100."

Smith. It was the problem of another study by Smith[127] to measure both the vocabularies of a bilingual child. The subjects included 30 children of Chinese ancestry resident in Honolulu and ranging in age from 37 to 77 months. Parental occupation on the Barr Scale averaged 9.64, which is higher than the average of 7.92 quoted for the general population of the United States. Vocabulary was measured by the use of the Smith Vocabulary Test (Smith, M. E., "An Investigation of the Development of the Sentence and the Extent of Vocabulary in Young Children," University of Iowa Studies, Studies in Child Welfare, Volume 3, Number 5, 1926). The test was given in one day in English and another day in Chinese by an examiner conversant with both languages and herself of Chinese ancestry. Smith found that -- (1) In either language the group was found to have below averaged-sized vocabularies for children of their age. (2) When the vocabularies of the two languages are added together two-fifths of the children exceeded the norms for monolingual children; but when words of duplicate meaning are subtracted only one-sixth of them do. She concluded that -- (1) Only the superior bilingual child is capable of attaining the vocabulary norms of monoglots and that a name for a large number of concepts is more desirable than two names for many of a smaller number of concepts." (2) "It would seem unwise to start any but children of superior linguistic ability at a second language unnecessarily during the preschool years."

Smith. It was the problem of an investigation by Smith[128] to compare children of Chinese ancestry as to their use of the English language with the same number of children of like age and ancestry who had been studied 22 years before. Fifty children of Chinese ancestry in Honolulu who were from 36 to 60 months in age were matched with the same number of children of like age and ancestry who had been studied 22 years before. The children were selected at both periods so that the distribution of their fathers' occupations agreed with that given in the latest census. Smith's findings included the following -- (1) In 1933, the children had been found to be much retarded in their use of English even though they preferred to use it rather than the Chinese which was spoken half the time in their homes. Eighty-two per cent of the words they used were in English. (2) In 1933, 75 per cent of the parents had been born in the United States, 24 per cent of the children were called by Chinese names, the Barr Ratings of fathers' occupations averaged 9.62, language ratings of homes according to amount of English used averaged 2.5 and the education of mid-parent 6.1 years. In 1955, all the parents had been born in the United States, all children were called by English names, Barr Ratings had risen to 10.46, language ratings to 4.2, and education of mid-parent to 12.3 years. The children had a better background for learning English. (3) In 1955, only one child could be considered bilingual and the children used on the average 98.7 per cent English words. Mixed sentences had fallen from a frequency of 17 per cent to 2.4 per cent. The only Chinese words used by more than three children were those by which they called their grandparents.

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[127] Smith, Madorah E., "Measurement of Vocabularies of Young Bilingual Children in Both of the Languages Used," The Journal of Genetic Psychology, 74:305-310, June, 1949.

[128] Smith, Madorah E., "Progress in the Use of English after Twenty-Two Years by Children of Chinese Ancestry in Honolulu," The Journal of Genetic Psychology, 90:255-258, June, 1957.

Smith concluded that the preschool children of Chinese ancestry are with few exceptions no longer bilingual and are exposed to very little Chinese; but their speech is still contaminated by pidgin English so that they still make too high a per cent of errors for their age.

Smith. The problem of this investigation by Smith[129] was threefold -- (1) "It is a survey of the comparative progress made in the mastery of the English language on the part of young children of different racial antecedents in the Territory of Hawaii, so that we may know better what to expect of the children of different racial groups at the time of school entrance and the Americanization of each group, so far as that may be measured by the use of its national language." (2) "It is an attempt to study a number of factors that may hinder or further the children in such mastery." (3) "Since the languages spoken in Hawaii are many, and many of the children are bilingual, it is an attempt to throw a little light on the problem of whether or not bilingualism is a hindrance in the mastery of speech to very young children."

The procedures of the study included the following -- (1) The children whose conversations were used in this study were representative of all the major racial groups found in the Hawaiian Islands. Every one of them was an American citizen, having been born in the United States; but for convenience, they are referred to by the name of the race or nationality of their ancestry. (2) The majority of the children were from the city of

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[129] Smith, Madorah E., "Some Light on the Problem of Bilingualism as Found from a Study of the Progress in Mastery of English Among Preschool Children of Non-American Ancestry in Hawaii," Genetic Psychology Monographs, 21:119-284, May, 1939.

Honolulu, but one group of 125 Filipino children was taken from plantation camps and villages in rural Oahu and Maui. The Honolulu children were selected at random from all parts of the city, but in such a manner that each major racial group consisted of 25 children at each age level from two to six years and approximately the same number of boys and girls. (3) Seven such groups of 125 children were secured, representing the Chinese, Japanese, Korean, Hawaiian and part-Hawaiian combined, Portuguese, and Filipino population of Honolulu, and the one rural group of Filipinos on plantations. Besides these main groups, there were 100 children of varied racial origin, who were studied while at kindergarten instead of in their own homes as the rest were; and another mixed group of 25 children who, although observed in their own homes, were not studied in the standard situation -- while at play with other children -- but when alone with adults. (4) This total of 1,000 cases furnished the material for the main study. (5) For each case studied, there were recorded 50 consecutive remarks of the child, spontaneous insofar as he was never addressed by the observer. Except for two special series, the records were taken in his own home or in its vicinity and, except for the two-year-olds, when he was playing with other children. (6) As the children to be studied spoke several different languages, it was obvious that no one person could secure all the records. The recorders for each racial group were, therefore, university students of the same racial ancestry as the child observed.

Smith's findings included the following -- (1) In comparison with haole children and those studied on the mainland, the Island children are seriously retarded in the use of the English language, a retardation which is not compensated for by a greater advancement in other languages used. (2) In Honolulu the children of Portuguese ancestry hear and use little but English; the Hawaiians hear some Hawaiian and the Koreans, considerable Korean, but each group uses 96 per cent English words; the Filipinos hear some Filipino and much pidgin English and use 92 per cent English words; the Chinese use 80 and the Japanese 50 per cent English words. (3) Mixed sentences, that is, those composed of more than one language, tend at first to increase in number with age and then to decrease for the more bilingual groups. (4) The frequency of error tends to decrease with age, but the only marked decrease for most groups is from two to three years. On the other hand, the two most monolingual made more errors at six than at five years. (5) The most frequent type of error found is the use of incomplete sentences, and next, the incorrect use of verbs. The insertion of words from other languages and the omission or incorrect use of prepositions and infinitives come next. The error type showing greatest excess over that found for Caucasians in the former study is in the use of the negative. (6) There is a slight superiority of girls over boys according to the various criteria of mastery of English used. (7) Children whose fathers' occupations rate above 9.0 on the Barr scale tend to use more and better English and longer sentences than do those whose fathers' occupations rate below 9.0. The difference is, however, not great for most groups, and in the case of the Koreans, does not exist as to proportion of English. (8) By all criteria of mastery of English, there is a positive relation with the number of years of English schooling of the parents. The degrees of relationship differs for different groups and with the criterion used.

(9) The most marked relationship found between mastery of English and possible factors studied is with the language rating of the home: children from homes where more and better English is used by other members of the household speak more and better English themselves and, to a slight extent, use longer sentences. (10) Children who reside in neighborhoods where most of the residents are of the same racial antecedents as their parents do not make so much progress in learning English or in its correct usage as do those children who reside in mixed areas. (11) Bilingual children who attend kindergarten or nursery school gain so much practice in speaking a more nearly correct English while at school that there is a carry-over into the home. (12) In a situation with adults only present, the children use more English, longer sentences, and make fewer errors than they do when playing with other children. (13) Children who were studied more than once, the second time after intervals averaging about nine months in length, show increase in use of English, reduction in errors, and increase in sentence length. This agrees with the trends found at different age levels in the several groups. (14) An attempt made to separate the influence of the two factors, bilingualism and pidgin English, on the retardation of speech of the children studied in Hawaii suggests rather strongly that not only is the child's mastery of standard English hindered by the prevalence of incorrect pidgin English, but also by his attempt to learn two languages. (15) When a language is disappearing before competition with a new language, nouns and interjections linger longest. Those words that refer to the more intimate aspects of the home, especially words expressive of family relationship and pertaining to eating, are the last to be abandoned, at least by young children.

Among Smith's conclusions were the following -- (1) The children in Hawaii from non-haole homes are retarded in language development to a degree so marked that, on most criteria, at the time of school entrance they are at about the level of three-year-old children from a less polyglot environment. The retardation is due to two handicaps: the prevalent use of pidgin English, and the bilingualism of many homes. (2) Children have a marked advantage over other children in mastering English when their parents were born in the Islands, received at least grade school education, have higher socio-economic status, and speak only English or, if they speak another language, at least use good English in the home. (3) When the mother tongues of the parents differ, the tendency is to use more English in the home, which condition leads to an earlier mastery of English by the child. (4) Kindergarten or nursery school attendance is a definite advantage for the bilingual child in Hawaii, particularly if there are more than a few Caucasian children in the same school. (5) The tendency of racial groups to congregate in separate residential areas, while it may be desirable for some reasons, is not conducive to the preschool child's advancement in the use of English. (6) Older brothers and sisters help the younger child to use more but, unfortunately, not better English. (7) The extent and correctness of English spoken by children in each racial group are related to the date of their ancestors' first arrival in Hawaii and their first contact with English, to the relative proportion of the population made up by each group, and perhaps to some degree to the kinship to English of the language spoken by the group.

Smith. It was the problem of a study by Smith[130] to determine whether or not the learning to read at the same time two different languages whose order of direction differs leads to greater confusion and a higher number of errors of reversal among normal children than is the case when but one language is studied at a time. Smith found that -- (1) Children attending foreign language school make lower scores on The Reading Direction Test by Madorah E. Smith, show greater variability in type of performance, and use the English type of pattern less frequently than do those attending English school only; the last difference, however, is the only one that is significant, 2.0 ± 6.9. (2) Children may not be quite so disturbed by the different reading direction if they do not enter both schools at the same time.

Smith. Smith[131] attempted to determine the peculiarities of the English dialect of Hawaiian children. The investigator used 1,021 fifty-sentence samples of the conversation of little children from two to six years of age. The children were of ancestry as follows -- Filipino 252, Japanese 207, Chinese 159, Portugese 136, Hawaiian 140. Smith found that -- (1) Interjections are used with high frequency in immature speech when an individual cannot express himself in more precise language. By far the greater majority of the children in the study were bilingual and were found to be retarded in the use of English: They frequently resorted to interjections. (2) The local dialect tends to ignore or confuse inflections.

Smith. It was the problem of Smith's[132] study "to determine if there is any difference in the number of different words per hundred as used by children from bilingual homes; and to try out the use of the number of different words in both languages used as a measure of the relative proficiency in each language."

For this study use was made of 199 records of the conversations of two- to six-year-old monolingual children and 101 records of bilingual children of the same age of Chinese ancestry. Language ratings were given each bilingual child according to the relative amount of language he heard. Language ratings were calculated from data as to the languages spoken or preferred by each person older than himself in his home with a double weight given to that one spoken at kindergarten if he was an attendant there. The ratings ran from 1 to 7 -- practically all Chinese to nearly all English. The number of different words per 100 running words used by preschool children when at play with other children, 199 of whom were monolingual, was compared with 101 such records made by bilingual children of Chinese ancestry in the city of Honolulu.

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[130] Smith, Madorah E., "The Direction of Reading and the Effect of Foreign-Language-School Attendance on Learning to Read," Pedagogical Seminary and Journal of Genetic Psychology, 40:422-451, June, 1932.

[131] Smith, Madorah E., "The English of Hawaiian Children," American Speech: A Quarterly of English Usage, 17:16-24, February, 1942.

[132] Smith, Madorah E., [illegible]rd Variety as a Measure of Bilingualism in Preschool Children," The Journ[illegible] of Genetic Psychology, 90:143-150, June,1957.

At each of four age levels from two to five years, the monolingual children used a greater variety of words. When 100 pairs were matched by age and sex, the monolingual children excelled the bilinguals by 2.77 words at 92 per cent level of confidence. Smith concluded that, "The difference between the number of different words in equal-sized samples of words in different languages appears to be indicative of the relative proficiency in the languages used. . ."

Spoerl. It was the problem of a study by Spoerl[133] to determine the various emotional factors which result, at the college level, from the experience of having brought up through childhood in a bilingual environment.

The subjects in the study were 101 freshmen enrolled at American International College, 69 of which were bilingual and constituted the Survey Group. The lines of evidence included (1) mortality during the first year, (2) interviews with the personnel office, (3) the Bell Adjustment Inventory, (4) the Allport-Vernon Study of Values, (5) the Bogardus Test of Social Distance, (6) the Modified Kent-Rosanoff Association Test, (7) the Morgan-Murray Thematic Apperception Test.

Among Spoerl's conclusions were the following -- (1) Bilingual students hold "extreme social values." (2) Bilingual students have emotional disturbances in the area of intra-family adjustments. (3) Bilingual students demonstrate great social distance among the members of other groups. (4) Bilingual students "do not even accept their own group." (5) Bilingual students are characterized by a lack of identification with their immediate environment. (6) Bilingual students experience family conflicts that are more intense than those of other families.

Spoerl. The problem of a study by Spoerl[134] was designated in three phases -- "One of these was the problem of the effect of bilinguality on verbal tests of intelligence, another the question of the academic success of the bilingual student, and a third the question of whether bilinguality becomes stabilized at any point in the individual's development."

Spoerl's procedure involved the following -- (1) The Survey Group consisting of 69 freshmen at American International College who had been bilingual in childhood (24 women and 45 men) was matched on the basis of the Henmon-Nelson Test of Mental Ability, as well as for age and sex, with a control group. (2) "Critical ratios ranging from .16 to .48 in regard to the number of items passed; and critical ratios between .01 and .16 in regard to the per cent of the final score made on each type of problem, demonstrated the validity of matching the bilingual students and their controls by means of this test." (3) The Intensive Study Group, consisting of 32 freshmen at American International College who had also been bilingual in childhood, was matched on the basis of the Henmon-Nelson Test of Mental Ability, as well as for age, sex, and socio-economic status.

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[133] Spoerl, Dorothy Tilden, "Bilinguality and Emotional Adjustment," Journal of Abnormal and Social Psychology, 38:37-57, January, 1943.

[134] Spoerl, Dorothy Tilden, "The Academic and Verbal Adjustment of College Age Bilingual Students," The Journal of Genetic Psychology, 64:139-157, March, 1944.

Spoerl's conclusions included the following -- (1) On an individual verbal test of intelligence the averages of the two groups did not differ significantly. (2) The bilingual students showed a consistent superiority in English ability. (3) The bilingual students were not handicapped in reading ability. (4) Bilingual students were found to do consistently better academic work throughout both semesters of their first college year. (5) "There was a slight, but not significant, evidence of a higher level of vocational plans on the part of bilingual students." (6) The bilingual women (although not the bilingual men) had a significantly greater interest in language.

By way of summary Spoerl states, " . . . it becomes clear at least at the college level, there are no continuing effects which stem from a bilingual childhood and which shows themselves in the academic records, vocational choices, or English ability of bilingual students. Neither does bilinguality seem to have any significant effect on the performance of college age bilingual students on a verbal test of intelligence. If there were a bilingual handicap in childhood functioning in either academic or verbal adjustments it has certainly become stabilized by the first year of college."

Steuber. It was the problem of Steuber's[135] study to determine differences in reading achievement of Anglo-American and Spanish-American pupils. She points out (1) Since there is a significant difference in the silent reading achievement in Grade 2A between the English-speaking group and the Spanish-speaking group, it follows that these two groups of children can not be expected subsequently to achieve similarly, if the same methods of instruction continue to be used for both groups. (2) Further work should be done to determine what changes in method should be made for the Spanish-speaking group.

Stoke and Lehman. It was the problem of this study by Stoke and Lehman[136] to determine the relationship between intelligence test scores and social status and occupational status. The investigators concluded that (1) Intelligence test scores correlate rather loosely with social and economic status (the correlations ranging usually from +0.30 to +0.40). (2) The great majority of superior children (I.Q. 120-140) and the great majority of gifted children (I.Q. 140 and above) come from the non-professional classes. (3) In the United States the great majority of gifted children come from families that receive rather modest incomes.

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[135] Steuber, Josephine, "Racial Differences in Reading Achievement," The Texas Outlook, 24:32, January, 1940.

[136] Stoke, Stuart M., and Lehman, Harvey C., "Intelligence Test Scores of Social and Occupational Groups," School and Society, 31:372-377, March 15, 1930.

Stroud. It was the problem of Stroud's[137] study to determine the relationship of intelligence test scores of public school children to the economic status of their parents. Stroud found that -- (1) There is a low positive correlation between intelligence test scores and economic status. (2) There is a negative relationship between the number of children in a family and its intellectual status.

Sutherlund. It was the problem of a research study by Sutherlund[138] to determine the relationship between I. Q. and size of family. In the study The Moray House Group Tests were administered to 60,000 school children between the ages of 11 and 13 in the West Riding of Yorkshire.

Sutherlund concluded that, "While previous investigations have in the main found negative correlations between intelligence and size of family with groups of subjects not homogeneous as regard social status and occupation of the parent, this paper would draw attention to the existence of the same phenomenon, though in a less marked degree, among a group of children whose fathers all follow one occupation and who are all of the same social status."

Symonds. It was the problem of this study by Symonds[139] "to throw light on the foreign language school problem which is perplexing Hawaii" -- to find what retardation there exists in the public school progress of those children who have attended Chinese language schools as compared with those Chinese children who have not attended these schools.

Symonds found that -- (1) Differences among individuals far exceed differences caused by attendance at a Chinese language school. (2) The bilingual students showed a consistent superiority in English ability. (3) The bilingual students were not handicapped in reading ability. (4) Bilingual students were found to do consistently better academic work throughout both semesters of their first college year. (5) "There was a slight, but not significant, evidence of a higher level of vocational plans on the part of bilingual students." (6) The bilingual women (although not the bilingual men) had a significantly greater interest in language.

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[137] Stroud, J. B., "A Study of the Relation of Intelligence Test Scores of Public School Children to the Economic Status of Their Parents," *Pedagogical Seminary and Journal of Genetic Psychology*, 35:105-111, March, 1928.

[138] Sutherlund, H. E. G., "The Relationship between I. Q. and Size of Family," *The Journal of Educational Psychology*, 20:81-90, February, 1929.

[139] Symonds, Percival M., "The Effect of Attendance at Chinese Language Schools on Ability with the English Language," *The Journal of Applied Psychology*, 8:411-423, 1924.

In summary Symonds states, ". . . it becomes clear at least at the college level, there are no continuing effects which stem from a bilingual childhood and which shows themselves in the academic records, vocational choices, or English ability of bilingual students. Neither does bilinguality seem to have any significant effect on the performance of college age bilingual students on a verbal test of intelligence. If there were a bilingual handicap in childhood functioning in either academic or verbal adjustments it has certainly become stabilized by the first year of college."

Terman. It was the problem of an early study by Terman[140] to determine the relationship between vocabulary and mental age. Terman found that -- (1) The correlation between vocabulary and mental age is .91. (2) Children of a given mental age have approximately the same vocabulary regardless of chronological age. (3) The median vocabulary at each mental age is practically the same for boys and girls. (4) Vocabulary growth is remarkably constant and regular.

Thompson and Dove. It was the problem of a study by Thompson and Dove[141] to determine differences, if any, existing in physical achievement of Anglo and Spanish American boys. Matchees were selected on the basis of age, height, and weight. The tests involved running, throwing, pushing, pulling, jumping, and so on. Thompson and Dove concluded that -- (1) "Contrary to at least local public opinion there are no significant differences in age, height, or weight of Spanish American versus Anglo American boys." (2) "When all boys in school are used there is a highly significant difference in favor of the Spanish American boys in every event used."

Tireman. It was the problem of a study by Tireman[142] to determine the amounts and types of errors in reading made by Spanish-speaking pupils. The investigator used lists of 2000 words which appeared in 29 primers, 27 first readers, 20 second readers, and 11 third readers. He found that -- (1) Forty-six per cent of the words were not understood by fourth grade children in the second semester. (2) Fifteen per cent of the errors fell into the category of "word pronounced correctly but meaning distorted in various ways." Tireman concluded, "It is not so much a question of whether phonics should or should not be taught as it is a question of how to teach phonics and how much to teach."

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[140] Terman, Lewis M., "The Vocabulary Test as a Measure of Intelligence," The Journal of Educational Psychology, 9:452-466, September, 1918.

[141] Thompson, Merrill E., and Dove, Claude C., "A Comparison of Physical Achievement of Anglo and Spanish American Boys in Junior High School, The Research Quarterly of the American Association for Health, Physical Education, and Recreation, 13:341-346, October, 1942.

[142] Tireman, Loyd S., "A Study of Fourth-Grade Reading Vocabulary of Native Spanish-Speaking Children," Elementary School Journal, 46:223-228, November, 1945.

Tireman. Tireman[143] attempted to determine the extent of oral Spanish vocabulary of beginning school children. According to Tireman, it was decided to conduct this study throughout the school year in the hope the "word well" of the children might be exhausted. For that reason a small number of children was selected. Four children who seemed to be average were chosen by the room teacher. Their families were representative of the community served by the school, both in economic status and in the fact that Spanish was the common language in the home. Their ages were six years and three months, six years and six months, six years and none months, and six years and ten months, respectively, at the end of the investigation (end of the pre-first grade). The interviewer met the children individually three times a week from December to May for interviews of twenty-five to thirty minutes each. A list of areas or centers of interest was prepared and pictures secured which related to these. The illustration was displayed and the child was asked in Spanish "What is this?" or "What is it about?" "Can you tell me a story of this picture?" or "Do you have this at home?" "Have you seen this?" "Where?" "Tell me about it," etc. Care was taken never to use a word which might give the child a clue to the picture.

Tireman's findings were as follows:

TABLE I. WORD COUNT OF THE ORAL SPANISH VOCABULARY OF PRE-FIRST CHILDREN

	Running Words		Different Words
Orlando	4587		1722
Rose	4092		1761
Gilbert	4224		1965
Pete	6052		2139
Total	18955	Median	1863

TABLE 2. OVERLAP IN THE FOUR VOCABULARIES

Total number of different words	3,437
Total number of words used once	1,637
Total number of words used twice	643
Total number of words used three times	520
Total number of words used four times	640

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[143] Tireman, Loyd S., Spanish Vocabulary of Four Native Spanish-Speaking Pre-First-Grade Children, The University of New Mexico Press, Albuquerque, 1948, 64 pp.

On the basis of these findings, Tireman concluded that the four Spanish-speaking children studied possessed about the same size of Spanish vocabulary as native English-speaking children of similar age have of English vocabulary.

Tireman. It was the problem of Tireman's[144] study to develop a curriculum for the Nambe Community School, a community of 602 Spanish American people located at the southern tip of the Rocky Mountain region. Tireman concluded that with Spanish American children ages 8 to 11 the utilization of the following community resources are effective: gardens, pets, farm animals, milk, clothing, food, occupations.

Tireman. It was the problem of a study by Tireman[145] to determine the aural and visual comprehension of English by Spanish-speaking children. The Durrell-Sullivan Reading Capacity and Achievement Tests were administered in Grades 5 through 8 at the Nambe School to 47 natively Spanish-speaking children. The findings of the study were as follows -- (1) The Spanish-speaking children understood written English better than they understood spoken English. (2) They comprehended written words and paragraphs about equally well, but they understood spoken paragraphs better than spoken words. (3) The reliable difference in favor of comprehension of written English was chiefly due to the fact that words seen were better comprehended than were words heard. According to Tireman, "these children suffered a handicap because outside the school they hear and speak little English. The school failed to overcome this environmental handicap and may even have added to it by not furnishing a program for growth in aural and spoken English comparable to the reading program."

Wallace. It was the problem of this study by Wallace[146] to interpret the research "carried out on different language groups by numerous educators and students in the United States to determine the effect of bilingualism on intelligence and scholastic achievement." The conclusions of this study included the following -- (1) The findings of present researches are inconsistent and inconclusive in showing the possible effects of bilingualism on the education of children. (2) The educational problems of bilinguals parallel those of monoglots. (3) The defeatist attitude concerning the progress of Spanish-speaking children is detrimental to their linguistic development. (4) Teachers "must have the time to use good teaching methods that develop the factors specified as prerequisites to good reading."

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[144] Tireman, Loyd S., "The Discovery and Use of Community Resources in the Education of Spanish-Speaking Pupils," Community Resources in Rural Schools, pp. 72-85, Yearbook 1939, The Department of Rural Education, National Education Association of the United States, Washington, D. C., 1939.

[145] Tireman, Loyd S., and Woods, Velma E., "Aural and Visual Comprehension of English by Spanish-Speaking Children," The Elementary School Journal, 40:204-211, November, 1939.

[146] Wallace, Almina, "Bilingualism and Retardation," Elementary English, 33:303-304, May, 1956.

Walters. Walters[147] attempted to determine the language handicap of foreign children in their use of the Stanford Revision of the Binet-Simon Test. It was concluded that there is a language handicap of from six to eight months of mental age on the test for children thirteen years old coming from foreign-speaking homes.

Weisser. It was the problem of this study by Weisser[148] to compare the various phases of handwriting as slant, alinement, quality of line, letter form, and spacing of white children, full blood Indian children, and mixed blood Indian children, and "to determine whether differences, if any existed, were racial or not." According to Weisser's research it is impossible to say that any differences that exist between whites and Indians in handwriting are due to race.

Woods. It was the problem of this study by Woods[149] to determine patterns of Mexican ethnic leadership. The interview technique was used to obtain data for the study. Among the conclusions established by Woods were the following -- (1) The pattern of Mexican ethnic leadership in San Antonio is complex and variegated "for through conquest the ethnic group lost the pre-eminence which it once enjoyed." (2) Before the Anglo invasion, Mexican leadership was of the patriarchal type, closely associated with a rigid class system. (3) Anglo ascendency was influential in altering, to some extent, this pattern, especially as large portions of the old inhabitants merging with the alien newcomers began to accept their democratic ideas. (4) The turn of the century witnessed a wave of immigration from Mexico. These immigrants were permeated with old cultural patterns, and a period of ethnic disorganization followed their arrival. (5) Leadership activities have been determined partly by social conditions. The bulk of San Antonio's Mexican population is poor, badly housed, ill-fed, and susceptible to disease. But, more than that, this group has its own distinctive culture -- Spanish language, Catholicity colored by "Mexican devotions," characteristic ways of reacting to given situations -- all of which tend to place these people in a group apart. Also, Mexicans have inequal opportunities for work, education, and recreation. (6) Mexican reactions to social conditions vary according to class positions within the ethnic group. (a) The elite, composed of the "cultured," old families, and the wealthy, tend to be more or less impervious to the plight of the masses. (b) The masses -- the poor and illiterate -- are also characterized by inertia. (c) It is to the emerging middle classes that the ethnic group must look for leadership -- professional and business men, often self-educated, are attempting to solidify the ethnic group in order to alleviate unsatisfactory social conditions through coordinated action. (7) Factors which militate against group consolidation include, first, close contacts with Anglos which might culminate in intermarriage and subsequent loss of ethnicity, and, second, the indulgence in suspicion, petty jealousy, and individualism that disrupts ethnic harmony. (8) The ultimate goal of Mexican ethnic leadership is a synthesis of the two cultures -- Mexican and Anglo -- rather than a wholesale adoption of Anglo values.

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[147] Walters, Fred C., "Language Handicap and the Stanford Revision of the Binet-Simon Tests," The Journal of Educational Psychology, 15:276-284, May, 1924.

[148] Weisser, Elizabeth, "A Diagnostic Study of Indian Handwriting," The Journal of Educational Psychology, 23:703-707, December, 1932.

[149] Woods, Sister Frances Jerome, Mexican Ethnic Leadership in San Antonio, Texas, The Catholic University of America Press, Washington, D. C., 1949, 134 pp.

Yoshioka. It was the problem of this study by Yoshioka[150] to determine whether Japanese children, according to the National Intelligence Test, fall below American children. Yoshioka concluded the following -- (1) "Young children under bilingual education have more to learn than unilingual children." (2) "Whether such extra burden can be borne with impunity by bilingual children is open to question." (3) Older children are better able to handle two languages than the younger. (4) "American Japanese children fell below American norms by 26, 31, 11, 24, 36, and 53 points for years 9, 10, 11, 12, 13, and 14 respectively and below Japanese norms by 30, 45, 41, 41, 30, and 50 points for each respective year."

Young. It was the problem of this study by Young[151] to determine the significant findings of psychology concerning the general intelligence of certain immigrant groups that have come to the United States so overwhelmingly during the past thirty years. Differences in intelligence quotients in first graders by racial stock were as follows -- (1) Spanish -- Median I.Q. 78. (2) Portuguese -- Median I.Q. 84. (3) Italian -- Median I.Q. 84. (4) North-European -- Median I.Q. 105. (5) American (North European Ancestry) -- Median I.Q. 106.

In his interpretation of his data Young stated, "If we continue our present muddling, irrational, hit-or-miss method of dealing with . . . these problems and the country becomes more and more inundated with inferior stocks, the questions of American citizenship, education and cultural progress will be increasingly difficult of solution. In fact, ultimately such problems as we now see them will be submerged in the low standards of life and culture which arise out of a lessened average intelligence in the general population."

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[150] Yoshioka, Joseph G., "A Study of Bilingualism," Journal of Genetic Psychology, 36:473-479, September, 1929.

[151] Young, Kimball, "Intelligence Tests of Certain Immigrant Groups," The Scientific Monthly, 15:417-434, October, 1922.

Critical Analysis

In the field of bilingualism, as in all things, it is as great a point of wisdom to find ignorance as it is to discover knowledge, to know what we do not know as what we do. In this regard, a review of the literature of bilingualism makes two points abundantly clear:

The first point is that the findings of investigators in the field have been inconsistent and inconclusive in showing the effects of bilingualism on the education of children. While, for example, some scholars point out in their research studies that measures of many groups of bilingual children have produced averages on tests of general mental ability and school subjects below the average of monolingual children of like ages, other scholars conclude from their equally important research studies that bilingualism bears no relationship to verbal intelligence and school adjustment.

The second point is that all but a few of the studies have been devoted to a recipe kind of approach to the education of bilingual boys and girls. The studies have seemingly overstressed implementation to the exclusion of diagnosis -- they have overstressed the details of methods and materials and have excluded for the most part the identification of the behavioral outcomes of the social-economic-educational influences that prevail upon bilingual boys and girls. This is not to infer that matters of implementation are not important points of concern; it is rather to emphasize that in the very real sense education is a matter of diagnosis as well as implementation.

In substance, then, it seems apparent that the inconsistent and contradictory findings of the research studies in the field of bilingualism might be attributed to the fact that the studies themselves have been much too narrowly conceived and have lacked a firm foundation of diagnosis. For this reason it would seem that the present investigation of mental retardation and pseudo mental retardation as it pertains to bilingual and subcultural factors would make a distinctive contribution to the field.

CHAPTER III

PROCEDURES FOR GATHERING THE DATA

The basic plan for the design of the study, including the various steps taken in gathering the major data used, will be discussed in this chapter. Sections will deal with (a) general methodology, (b) general data gathering procedures, (c) sampling considerations, (d) testing instruments, (e) teacher's reports and observations, and (f) other observational techniques.

General Methodology Used in the Study

In the early stages of the study, considerable time was spent in defining the objectives of the study and in deciding upon the methods to be used to attain these aims. The staff of the study functioned as a committee, enumerating and evaluating several possible approaches. It was decided that the major need in a study of this kind was the accumulation of descriptive data, as a thorough search of the literature failed to disclose a comparable body of such information about any large, intact group of bilingual children similar in characteristics to the sample of this study.

A purpose of this study presented in Chapter I was to examine both individual and group characteristics of the children in the sample in an effort to describe in great detail their school behavior, their classroom and test performances, their growth and developmental characteristics, their language development, and their interaction to both their community and home. It was hypothesized that these detailed descriptive data and their final analysis would shed light on the relationship of bilingual and bicultural influences upon the school learning of these children. Assessment of the development of their learning would help sift fact from opinion in the controversial area of "psuedo mental retardation." In order to achieve this purpose the study was designed to gather a large body of descriptive data about each child, his family and his community groups in an effort to depict him more clearly as a member of a sub-cultural group described in this study as "bilingual."

During the study, each of the selected children was tested three or more times with individual psychological tests of mental development. In addition, each child was tested each year with group tests of educational achievement; every child was observed in his classroom; and a sample was individually interviewed. Every home was visited at least twice in an effort to observe the child in a non-school environment and to secure descriptive data on his family. In addition to this basic contact with the subjects of the study, the classroom teachers carefully observed and recorded their descriptions of each child's behavior and language usage for the three years of the study.

General Data Gathering Procedures

As the data were collected for the subjects of the study, they were recorded in a cumulative folder which was maintained for each child by the project staff. An extensive case record was developed for each child which included, in addition to the basic data itemized above, a chronologically recorded series of case reports made by the project's social worker. Census data were obtained from the schools' permanent files and this material was added to the case folders periodically. A photographic record of the physical development of each child also was made.

Early in the study, it was realized by the project staff that many of the procedures and instruments necessary to accomplish the aims of this investigation would have to be designed and innovated. Many staff meetings were devoted to this purpose during the first year of the investigation. A "face sheet" or basic data sheet was one of the instruments designed for the purpose of recording pertinent data about the subjects, such as child's family, parents' occupation, facts concerning their marriage, child's and siblings' birthplace, and data concerning others in the household. A sample of this is to be found in Appendix B. This sheet was to serve as a general identifying and recording summary to be supplemented by other data gathering instruments as needed. The entries were made by the project social worker and secretary and obtained by abstracting information from school records and by personal interviews with the family of the child in question.

A second data sheet was designed for gathering and summarizing information about the children's homes and community. This data sheet also is to be found in Appendix B.

A medical record[1] published by the Child Welfare League of America was used to record basic health and physical growth information. These data were obtained from the schools' records, by interview, and from observational techniques.

One of the major problems facing the staff of this study was to attempt to understand the child in relation to his culture, his community, and his background. To accomplish this objective, many trips to the school communities were taken by selected staff members, interviews were held with community leaders, meetings were arranged with teachers in the schools in the project, and much attention was directed to the process of better perceiving the child of these sub-cultural groups as he perceived himself and was perceived by his peers. Careful study was given to the problems of establishing gradients in the over-all category of "Mexican-American" to avoid stereotyping and over-generalizing. Resource persons, some of whom came from backgrounds similar to those of the children of the study, were used to help establish some concern for the differing degrees to which both bilingualism and biculturalism could be regarded as operants and meaningful constructs.

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[1] Child Welfare League of America, "Child's Medical Record."

Sampling Considerations

The sample consisted of 188 children who were the total number of enrolled first and second grade pupils in Schools A, B, and C in the middle of the second month of school the first year of the study (October 1957). (Community characteristics of these three school-communities will be described in detail in Chapter IV.) Consistent with the declared purposes of the study, school-communities were chosen which normally had nearly total enrollments consisting of children of "Mexican-American" and Indian bilingual home backgrounds. It was felt that the three communities chosen were representative of characteristic populations of such children in Arizona and parts of the Southwest. Two of the communities were mainly "Mexican-American" in composition and were schools in a large, metropolitan population center in the Southwest. The other school while atypical, was felt to represent an unique opportunity to study an isolated, rural community made of an amalgam of Mexican-Americans and Indians where efforts to become acculturized were slight, if not actively resisted by the opinion makers of the community.

Of the original 188 subjects, one hundred and twenty children remained in the study at the end of three years. This attrition is represented in the table below:

POPULATION OF THE STUDY BY SCHOOL AND YEAR

	1957-58	1958-59	1959-60
School A	53	49	41
School B	54	35	28
School C	81	57	51

Pupils from all the first grade classes and selected second grades from each of the three schools composed the original sample. Selection of the three second grade classes was based upon the recommendation of each of the principals in the three schools on the basis of their representativeness.

Testing Instruments Used

Studies reported in Chapter II emphasize that children with Indian or Mexican-American backgrounds consistently score lower on standardized intelligence tests than do urban, middle class Anglos. This fact is one contributor to the labelling of such children as "mentally retarded" or "slow learning." In addition, studies commonly report the school achievement as measured by standardized achievement tests is slower for these children than the groups upon whom the tests are commonly standardized. Other studies confirm the observation that children with backgrounds similar to the population of this study often perform better on "non-language," "non-verbal," or "performance" tests than they do on highly verbal tests.

Throughout the past ten years, much literature has accumulated outlining the influence of social class or caste on both school achievement and test performance. It was an assumption of the staff of this study that irrespective of the tests chosen for the sample, some bias would result. In the absence of a truly "culture-free" or "culture-fair" test, care was taken to choose testing instruments where the variables of bilingual and class differences would be at a minimum.

Individual Psychological Tests

Analysis of research studies in which the subjects were Mexican-American or Southwestern Indian, and for which individual psychological test results were available suggested that several instruments were prominent among those used. These included the Arthur Point Scales,[2] the Wechsler Intelligence Scale for Children,[3] the Stanford-Binet,[4] the Leiter International Scales,[5] the Columbia Mental Maturity Scale,[6] the Goodenough-Draw-a-Man,[7] and the Raven's Progressive Matrices.[8] Detailed consideration was given to each of these scales early in the study. Criteria used in the final selection of the testing instruments included evidence from the literature based upon research, suggesting the following:

(a) Suitable and sufficient level of reliability established.

(b) Some evidence that language comprehension and fluency would be minimized in directions and the items themselves.

(c) Weight given predominately to performance tasks rather than purely verbal tasks.

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[2] Arthur, Grace, Arthur Point Scale of Performance Tests. Revised Form II, The Psychological Corporation, New York, 1947.

[3] Wechsler, David, Wechsler Intelligence Scale for Children. The Psychological Corporation, New York, 1949.

[4] Terman, Lewis M. and Merrill, Maud A., Revised Stanford-Binet Scale, Houghton-Mifflin, New York, 1937.

[5] Arthur, Grace, Leiter International Performance Scale: Arthur Adaptation, C. H. Stoelting, New York, 1952-55.

[6] Burgemeister, Bessie B., Blum, Lucille H., and Lorge, Irving, Columbia Mental Maturity Scale, World Book, Yonkers, New York, 1954.

[7] Goodenough, Florence, Draw-a-Man Test, World Book, Yonkers, New York, 1926.

[8] Raven, J. C. and Lewis, H. K., Progressive Matrices, Psychological Corporation, New York, 1951.

(d) Adequate floor for measuring M.A.'s as low as 4-0 and as high as 10 or 12.

(e) Scales with comparatively simple tasks, easily administered, with minimum of verbal directions.

(f) Scales with some "face validity" -- i.e., high intrinsic interest level as an aid in motivation.

(g) Construct validation evidence suggesting that performance on the scale related to identifiable factors of mental development.

(h) Scales that have shown some promise in previous research with populations similar to the sample.

After careful application of the above criteria to the instruments under evaluation, the following basic testing program was established for individual assessment:

Year	Instrument Chosen
1957-58	Grace Arthur Point Scale (II), 1947 Revision Subtests: Knox, Seguin, Stencil, Porteus
1958-59	Wechsler Intelligence Scale for Children, Vocabulary plus all performance scale.
1959-60	Grace Arthur Point Scale (II), 1947 Revision Subtests: Knox, Seguin, Stencil, Porteus

Group testing. It was decided to follow the regularly scheduled school testing program for the group testing of achievement. This would give the investigating staff a base upon which to measure more precisely with the individual intelligence tests. The group tests given are presented in the following:

Group	Grade	Year	Instrument Chosen
I	1	57-58	Gates Reading Readiness
	2	58-59	Gates Primary Reading Otis Alpha
	3	59-60	Gates Primary Reading, Advanced
II	2	57-58	Gates Primary Reading Otis Alpha
	3	58-59	Gates Primary Reading, Advanced
	4	59-60	California Achievement Otis Beta

__Testing Procedures__. Prior to testing children of the study, the project psychometrist tried several testing instruments on children with bilingual backgrounds from among the non-study populations of School A as well as bilingual children from non-study schools. Results of these twelve preliminary testings were analyzed as an aid in selection of the final test battery and as a means to alert the psychometrist to possible problems which would appear in testing bilingual children.

The testing for the study was done in the schools generally during regular school hours. Children were introduced to the tester who observed in their classes several times prior to the testing so that they would feel that he was not a stranger. No changes were made in the directions for any of the standardized tests, and they were given as prescribed in their respective manuals. All tests were given in the schools' counseling offices with efforts to assure optimum conditions of privacy, light, ventilation, and lack of distractions.

Group tests were administered as they would have been done normally by each of the schools. These conditions might be regarded as relatively normal for tests given by classroom teachers. Tests were centrally scored and recorded, entered on the schools' cumulative records, and thus made available for the study.

Teachers' Reports and Observations

Teachers in each school and grade in which there were children of the study population were used as observers and recorders of the typical behaviors of the subjects. To accomplish this purpose, two instruments were adapted for this study. These were each called "A Teacher Report of Student Behavior," and were modifications of the behavior description reports developed as a part of the "Eight Year Study" of the Progressive Education Association.[9] The first of these forms was used to gather the teachers' observations in the area of the child's general behavior and included such categories as "Cooperation," "Responsiveness," "Emotional Control," "Physical Development," and "Concern for Others." The second form was used to gather teacher estimates of the child's language facility and included such categories as "Talkativeness," "Language Used in Class," "Language Used on the Playground," and "Accent." Each trait category was further divided into five specific trait definitions, including one which stated, "No opportunity to observe." (Copies of these instruments may be found in Appendix B.)

This technique was intended to provide a common framework in which to discuss the development of the subjects of the study and yet be a flexible, but standard method of recording such observations. Care was taken that each teacher who participated in the study was informed of the nature of the behavior description technique. The rationale behind this approach rather than one of more quantified trait measurement attempt was based upon careful consideration by the project staff which felt that the need for clear and careful description of the subjects of this study outweighed the seeming "quantified" scheme inherent in the measurement approach. Validity evidence by trait measurement instruments for a population such as this one was conspicuously missing in the literature.

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[9] Progressive Education Association, The Reports and Records Committee, __Manual for Behavior__ Description, n.d.

The behavior description technique is based upon the following operational assumptions: (1) it does not attempt to provide a numerical scale of scores; (2) it makes no assumptions about the worth of any of the descriptions for any individual; (3) it discourages comparisons of individual child behavior with the static standards of a group; (4) it does not pretend to be highly objective and statistical; (5) it does not assume that information of a limited group of attitudes and performances can completely explain the individual child under study; (6) it does not imply motives; and (7) it discourages generalizations beyond what is actually observed.

The behavior descriptions used in this study were presented to the teachers involved with some explanation of the rationale underlying their use. Further care was taken that the teachers using this procedure made their descriptions without consultation with anyone. They were encouraged to describe one or two children at a time and to base these observations upon direct experience with the child. Furthermore, they were cautioned not to try to equalize the numbers of pupils under any of the categories to achieve any particular type of distribution. No requirement was made that the teacher describe behavior of each child in each category. Rather the teacher was encouraged to describe behavior only in categories in which there had been ample opportunity to observe the child. In each case of a child who remained in the study there were three years of teachers' descriptions available for analysis.

Each teacher was given the two different "Teacher Report of Student Behavior" forms each year of the study and was encouraged to enter descriptions over an extended period of time. Space was allowed for anecdotal comments, and teachers were encouraged to enter as many descriptive comments as they were able to record.

Other observational data concerning the behavior of the children of the study were obtained in conference with staff members and teachers.

Other Observational Techniques Used

Another major source of data gathered about the children of the study came from the activities of the project's social worker. Her activities included observation and interviews with the children and interviews with their parents in their homes.

Careful, detailed observations of each child were made during the first and third year of the study by the social worker who visited each class many times and observed and recorded descriptive material about each child.

Attention was given to the physical appearance of the child under observation, to his language facility, and to his behavior both in the classroom and on the playground.

Under the direction of the social worker each child was asked to make a drawing of (1) foods he had for breakfast one morning; (2) his family group; and (3) the interior arrangement of his home, including sleeping facilities. The drawings were made during the first and third years of the study and served as further checks upon information obtained in home visits.

At the end of each year, all data obtained, such as teachers' evaluations and descriptions, psychological test results, and school records were gathered and recorded in the child's folder. Also, social agencies in the various communities were contacted and were asked for information on the families of children where possible. This was done by the reading of records in these agencies and by conferences with agency personnel.

In the second year, 35 children were selected by a stratified random sample for individual interviews by the social worker. This interview was taken primarily in order to obtain information regarding the child's language ability and as a means of further describing the child under study. (The interview questions are to be found in Appendix B.) Insight was gained into the child's world and that of his home as doll and doll house materials[10] were used during the interview. The worker also used the interview in order to gain further understanding of the child's level of language facility, his problem solving ability, and his general behavior.

The social worker attended many PTA meetings and school programs to which parents were invited in order that the parent would identify the worker with the school and its program. This activity enabled the social worker to gain sufficient rapport with some parents to facilitate home visits.

Each home was visited twice, once in the first year of the study and again in the second year. The first interview was of an hour's duration and was designed to add supplementary information concerning the child and his home. This tended to follow the structure of the face sheets described above. The second interview was designed to elicit parental attitudes toward school and community as well as to obtain background material about the family and its place in the sub-cultural group and the larger community group. (The questions used are reported in Appendix B.)

The social worker integrated all of the above mentioned observational data into her case materials in each child's case folder.

Summary

This chapter has presented a review of the data gathering devices used in the design of the investigation. Attention was given to a presentation of the kinds of instruments used as well as the methods used to obtain the basic data. Sections dealt with general methods, sampling, testing, teachers' observations, and other data gathering devices.

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[10] Driscoll, Gertrude P., Driscoll PlayKit. The Psychological Corporation, New York, 1955.

Chapter IV

THE CHILDREN IN THEIR COMMUNITIES

Introduction

The purpose of this chapter was to provide a description of the setting in which the children of the study live. No attempt was made to conduct a community study of a comprehensive nature. However, a review of the setting of the study provides a backdrop for the descriptive analysis of these children.

General Historical Setting

The Southwestern United States, the larger "community" of the children of this study, has been called "a land of contrasts-- a land that is never to be fully understood but always . . . loved by sons and daughters sprung from . . . a diversity of origins, animated by . . . a diversity of motives and ideals that generations must pass before they can fully understand each other."[1]

The history of man's occupancy of this area dates back to the centuries before white men ever discovered America. It was the home of the stone age man, of the Spanish conquistadores, of the padres who devoted their lives to the spreading of Christianity among the natives, of the Indians and of the Mexicans, the latter being among the first residents.

The area belonged to Mexico before it became a part of the United States. To the Mexican people it owes much of its colorful individuality. Alsberg wrote: "History is filled with the names of Mexicans who played a prominent part in the development of the first settlement."[2] There was a time before the area was divided into states that the population was largely Mexican; therefore, most of the Spanish-speaking people of the area are as much at home here as "the Gringos" who came in larger numbers after the Civil War.

In spite of the fact that Mexicans, Indians, and Anglos have lived side by side for generations, they have done so as partial strangers to one another. While each has borrowed from the cultures represented,

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[1] "A Compilation by the workers of the writers program of the Works Project Administration, State of Arizona, Arizona, the Grand Canyon State, American Guide Series, Arizona State College, Flagstaff, Hastings House, New York, revised by Joseph Miller, edited by Henry G. Alsberg, 1956, p. 3.

[2] Ibid., p. 7.

none of them has made a conscious effort to adopt each other's culture whole-heartedly. This lack of cross cultural integration probably stems from the fact that the Mexicans and Indians were subdued, conquered and segregated by the Anglos as the area was settled. Mexicans were forced into lower economic levels. Even today, this segment of the population has a generally less favorable economic level than the majority of Anglos. A citizen interviewed during this study spoke of the children of this generation: "They have it good now-- they don't know what poverty is. Some of the people of my time were half starved. They didn't have enough to eat and no means of earning a livelihood."[3]

There is not much homogeneity about the area's population. There are Indians whose forebears were here first and Mexicans whose ancestry dates back three centuries. There are those who have crossed the border only recently as immigrants. There are pioneers who came more than a half century ago to a rough frontier. And there are thousands who came from every state in the Union and from every country on earth. Therefore, the general setting of this descriptive study can be compared to the stage and scenery of a drama, the story of which is much more easily understood and insights into the cast made much sharper by reason of the setting.

COMMUNITY A

In order to preserve anonymity, the first of the three "communities" was called Community A. It was selected as an area of the study because its population was homogeneous to the extent that nearly all residents were bilingual, and some spoke three languages. Spanish was the dominant language with English and Yaqui (an Indian dialect) spoken by a minority in the community. The population was composed of a group of Mexican-Americans, Mexicans, and Mexican-Indians. One Community A citizen said he thought the population was "one-fourth Yaqui, three-fourths Mexican, and a few whites." Our reference said further that there were about 1800 people listed in the 1950 census, but now (1960), "twenty-eight hundred is about right."[4]

Even though Community A was somewhat isolated from the Anglo residential areas of the metropolitan city, there was evidence that the Mexican and Mexican-Indian segments of its own population did not mix well. This seemed to stem from the history of the two peoples, in which the Mexicans were the dominant group, who "pushed the Yaquis about."

During the Yaqui Easter pageant held in the village each year, the "evil one" was portrayed as a Mexican soldier. During interviews with parents on their reasons for liking or not liking Community A, this feeling of mistrust and rivalry between the two groups was evident and an excerpt from a record illustrates this:

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[3] Notes from an interview with a citizen of the area.

[4] From an interview with a person living in Community A.

> Mr. C. expressed some dislike for Community A inasmuch as he thinks there is always a certain amount of bad feeling between the 'Mexicans and the Yaquis.' Mr. C. said his children often are mistreated by their neighbors' children. 'Sometimes they come in with their eyes bleeding or black and blue from having been hit by a rock.'[5]

The Mexican-Indian component of Community A was a group with an interesting historical background. They were "a proud, energetic people who came from the Bacatete Mountains region in the southern part of Sonora, Mexico."[6]

In 1870, efforts made by the Mexican government to subjugate these Indians were met by stiff opposition. The latter organized themselves and resisted every move by the Mexican government. Their differences stemmed from the Mexican government's encroachment upon Yaqui lands.[7] Finally, the Indians were brought under control and many were deported from their "country" to work on the large haciendas of Mexico. Even after this, there was resistence until 1895 when the president of Mexico inaugurated a policy of Yaqui extermination. Yaquis were shot down as they worked in fields; others were rounded up and shipped as slaves to work on the plantations of Yucutan. Those who escaped penetrated into the mountains and others began their quest for safety by going to the United States. In an effort to gain this political asylum, many "traveled the entire distance on foot from their homes in Sonora. They brought their meager belongings and suffered untold hardships in order to find refuge in the United States."[8]

Description of Community A. Community A was located on a slight rise in elevation. It commanded a view of a large fertile valley in which was located the state's biggest urban area. Community A was about ten miles from the city, and was largely residential, having homes of very humble appearance. Some of these were clustered around a sandy windswept square on one side of which was located the picturesque adobe Roman Catholic Church. A smaller, more dilapidated Yaqui meeting place was nearby. Most homes were located on either side of the main street which bisected the village.

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[5] From an interview with a local resident.

[6] "Yaqui," Howard Ruppers, Current News, February, 1957, Salt River Water Users Project, Phoenix, Arizona, p. 1.

[7] Ibid., p. 2.

[8] Ibid., p. 2.

There were few business establishments along the main street which was the only paved street in town. There were four grocery stores, a service station, and two bars along a several block section of this street. The bars had been quite controversial. The first of these came to the village under legal protest. All references in Community A and many of the parents mentioned during interviews that there was much drinking among certain groups in the community. One reference said most Anglos who come to the village for various reasons during the day do not really know the community. He stated, "They are here during the day from eight till five, when everything is nice and peaceful. But the town really comes to life at night and from Friday till Monday."[9]

Part of Community A was situated on an acreage belonging to a church mission. The school itself was located on part of this land. Many of the families of the community had built their homes on this acreage and on a nearby 40 acre plot which the state set aside for the Mexican-Indian people when they were forced to move from their original site about one and one half miles north of the present town. The fact that many of the homes were on land for which the owners did not have deeds created a problem. Gradually the people of the community were trying to get legal titles to their land.

The town as such had no irrigated land but was on a rather dry, flat elevation, partially hidden by a frame of tamarisk trees and willows which grew along the edge of a large irrigation ditch skirting the settlement. Actually the deed restrictions governing the "mission" land permitted irrigation in the area, but it had never been secured because residents could not bear the cost of such a project.

From all sources, there was indication that the churches in Community A wielded quite an influence on the people, but this was not apparent on the surface as no organized youth groups or other dominant church auxiliaries were found. The effect of religion on the lives of Community A's inhabitants was most evident during seasons when religious holidays were observed. In the autumn of the year, "All Saints' Day" and "All Souls' Day" were celebrated, while in the spring, the Lenten and Easter periods were important. While these were Christian Holy days observed in all parts of the world, they were particularly significant in Community A, as the Christian symbolisms were intermingled with the ancient Yaqui customs. The ideas portrayed during these occasions carried over to form an underpinning philosophy for most of the population. The activities of the Yaqui Church were especially heightened during Lent and culminated in the "Sabado de Gloria" celebration the Saturday before Easter.

The largest group of inhabitants of Community A belonged to the Roman Catholic and Yaqui churches. These groups were considered as one, according to most references, since the Yaqui people were mostly Roman Catholic in Christian beliefs. Fewer members of the population belonged to the Protestant denominations, but these churches provided services such as day care for small children during the cotton picking season and occasionally helped in other ways.

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[9] Quoted from case records.

The public recreational facilities in Community A were the school playground and an adjoining baseball diamond which was also the property of the school. These were the only gathering places for the children of the community. Two county recreational leaders were sent to the school area during the summer. In addition, a crafts teacher came once a week. This was an effort to provide organized activities for children whose parents must work on the farms and ranches during the summer and who would otherwise be unoccupied and unsupervised. In addition to these recreation workers, there was a Campfire Girl and Scouting program in the community, carried on primarily by the teachers of the school. There were no movies (except one given by a mission church once a week for children) or other public places of amusement other than the two "cantinas" (bars) and no public transportation to the city.

Since there were so few public recreational outlets for people in Community A, their pastimes had to be derived in other ways. Most of those interviewed indicated that simple forms of recreation were the ones most often engaged in.

> With regard to family recreation, Mrs. Y. indicated that most of their pleasures had to be things that do not cost money as they simply can't afford them. The children like to play with neighbor children. She pointed to a vacant lot where the children were playing baseball. 'We play games and visit our relatives close by. Sometimes my husband and I play ball with the kids but they say I'm too fat for that. But what we all like to do best is look at TV.'[10]

On the basis of the families visited in the study in Community A, 59 per cent had television sets and a higher percentage had radios. These were evident even in homes where there were only the bare essentials, as case records showed:

> The house is constructed of scraps of lumber, tin and cardboard. The interior, like the outside, is of poor quality. There are no floors, just the bare earth, and no inside finish, just the boards which form the outside walls. There are only two rooms to house the eight people of the family--a kitchen and the room where the family sleep. The latter has only four pieces of furniture in it--three beds and a TV set. The family was gathered about the set watching an 'American' cowboy program at the time of this visit.[11]

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[10] Notes from an interview with a local citizen.

[11] Notes from observations contained in case records.

In connection with the use of leisure time, it was interesting to note that very few of the families interviewed were affiliated with any organized clubs or associations other than those connected with or sponsored by the school, such as the Parents' Club and the Scouting programs. Even these were not as well attended as the population of the school would indicate they should have been.

Most of the wage earning population of Community A looked to agriculture for its principal source of income, and the community itself was situated near a large farm area. This had its effect on the economic structure of the community, as much of the work was seasonal and consequently there was unemployment at certain times of the year. Threaded through conversations with the parents of children in the study were descriptions of working conditions.

> As we were talking about Mr. L.'s occupation, he turned to me in a rather futile gesture and said, 'I sacked 133 sacks of potatoes and worked from early this morning until late this evening, and all I earned was seven dollars.' . . .
>
> Mr. C. could not very well estimate their yearly income as he works for a truck farmer located on X Road and earns 85 cents an hour when he works. Just now he is picking cucumbers.
>
> Mrs. L. also works when the cotton season is on. She 'picks' and earns from three to eight dollars per day. She said this work was very hard and on the days she earned eight dollars, she worked from before daylight until after dark at night. . . .
>
> Mr. G. is unemployed at present but when he works he is employed in several of the farm crops. He sometimes works in carrots and lettuce and always in cotton when it is in season. Lately when he has been out of work, it has been necessary for him to report to the employment office in town where trucks are then dispatched to take the agricultural workers to their jobs. In order to do this, it has been necessary for him to get up at 3:30 a.m. and be in town by 4. Because of the distance, he sometimes did not get home until almost 7 o'clock in the evening. One of the problems he had was in providing himself with transportation from his home to the employment office. He used to have a car, but recently this was picked up by the police because it did not have the proper license plate on it. It was impounded and the man was told he would have to pay 25 dollars to get it out. However, Mr. G. only paid 50 dollars for the car originally and if 'I had 25 dollars, I would buy my kids some groceries.'[12]

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[12] Notes from case records.

One reference from Community A (and this was borne out in interviews with parents) said he felt that there had been some change in the general economic structure of the community in the past several years. Although he agreed that originally and even now, most of the people depended upon agricultural labor for their income, more and more of the men were seeking steady employment. Our reference estimated there were "about 25 young men" (of the community) who were presently engaged in the construction industry. For the most part, these men were laborers, but a few had gone into the more skilled trades, such as brick masonry and plumbing. They had learned their trades through the apprentice system and all belonged to various unions. In interviewing parents, many expressed hope that their children could do something more than agricultural labor. As one father quite spontaneously put it, "I don't want my children to work in the fields. They go to work at six in the morning and at six at night they are still working."[13]

There were very few women in Community A who worked outside their homes except during the cotton season when they went into the fields with their husbands. The lack of employment of women in the community probably stemmed in part from the attitude of the "culture" with regard to the employment of women. A reference, during an interview, discussed the practice of Anglo American women leaving their homes to seek employment. This person expressed strong disapproval and emphasized the fact that in traditional Mexican culture this was frowned upon. She declared: "Of course there are some circumstances when a woman has to earn a livelihood for herself and children. But when she goes out deliberately just to make money, this is very bad."[14]

Citizens were asked: "What do you like about Community A?" Many persons stated that their chief reason for living in Community A was the fact that the living costs were low. Such expressions as "We have no rent to pay," "We can live cheaply," "It doesn't cost us much here," were frequent comments. A high percentage of the population of this community owned their own homes. It was found that 94 per cent of the Community A children studied lived in homes owned by their families. Some of these dwellings were constructed from "odds and ends" and were very modest in appearance. One reference said that the community sometimes was referred to as "Tintown" because so many of the houses were made from scraps. The majority of the homes of this community was built by the owners. Slightly more than half of the houses were of adobe construction; the remainder were of frame, stucco or scrap materials. Home size ranged from one to six rooms. However, 28 per cent of the families lived in two-room dwellings, 29 per cent in three-room dwellings, and 28 per cent in four-room dwellings.

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[13] Quoted from case records.

[14] From an interview with a citizen in the area.

Some of the homes showed surprisingly good workmanship as was described in this excerpt from a record:

> The house is built of frame and stucco and is painted. It was evident in Mr. X's bringing me (the social worker) inside that he was proud of the recent additions he had made. The inside walls were both plastered and painted and through an archway it was noted the kitchen had built-in cupboards and a sink with both hot and cold water. Through another door I observed a bathroom equipped with all the modern fixtures. The rooms were furnished comfortably. It was apparent from the placement of the furniture in the living room that the TV[15] set played an important role in this family's life.

Most of the homes (80 per cent) had electricity and about one-fourth used kerosene lamps for lighting.

During an interview with the G. family, it was mentioned that they do not have electricity in the house. But Mr. G. said he had been working more steadily lately and "maybe we'll buy it (electricity) at Easter."

Almost without exception the families interviewed gave the poor-tasting water as one of the things they disliked most about Community A. One or two went as far as to say they thought it met only minimum health standards and blamed it at times for sickness in their families, especially among some of the younger children. For example:

> Mrs. J. said her new baby had suffered from diarrhea, probably because of the water. She said recently she had been forced to buy distilled water at the store for the baby.
>
> Mr. N. said he would like to leave (Community A) inasmuch as the water tastes very bad and, according to him, when it was last tested for purity, it 'just barely met the health standards.'[16]

But another mother interviewed said she liked everything about Community A, and when asked about the poor-tasting water, she shrugged her shoulders and said, "You get used to it."

Most homes in Community A had only one cold water tap for the family, and this usually was located in the yard. Likewise, heating and cooling, for the most part, were inadequate for the homes visited.

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[15] From observations recorded in case records.

[16] Taken from interviews recorded in case records.

In about two-thirds of the homes visited, heating and cooking by wood-burning stoves were observed. Most homes had no form of cooling and 94 per cent of the homes visited had outdoor toilets. One home described in a record seemed fairly typical of those visited:

> The interview took place in the rear of the house on the shady side where Mr. A. brought chairs. The original structure is of adobe, but added to this, and at the back of the house, is a bower adjacent to the back door. This is constructed simply of poles with a roofing of palmetto leaves. Under this is the washing equipment, also a table and a double bed. It would appear that much of the actual housework is carried on here. It is used by the family in summer as a cool place to eat and sleep. A little back of this bower is the wood pile and to the rear of that, the outdoor toilet. The only portion of the house (the interior) which I saw was through the back door of the kitchen. I noted that the floor was of dirt. In the kitchen was a wood burning cook stove and a table with chrome legs. Judging from the general neatness of the yard, I would think the housekeeping standards are fairly good here. The yard was not immaculate in appearance but, allowing for general mechanics for living, it had a neat appearance.[17]

The yards in the neighborhoods of the "study" group of children were largely barren. Eighty per cent of them had no grass and only a few trees except the willowy tamarisk. Homemade fences surrounded the lots and stacks of scrap wood and lumber for heating and cooking purposes were observable in most yards. At one home visited, the staff member observed a pile of scrap lumber of which the father of the family seemed quite proud. He said he had purchased it all for ten dollars, "to make my house."

Ninety-six per cent of the streets were unpaved and in poor condition. Occasional rains had flushed along the hard-baked ground and eroded ditches and gulleys. There were no paved sidewalks in the community and no sidewalks of any kind in about one-third of the neighborhoods visited.

The school. The oldest part of the school plant in Community A was built in 1929. In 1930, there were about 30 children enrolled. In 1933, a building used by the WPA Nursery School was added to the school and again in 1950, a wing was added by moving an abandoned World War II army barrack building to the site. This was remodeled to further house the school population.

Another barrack building was being remodeled for classroom use in the fall of 1960 and a one-room house had been moved to the school site for renovation to be used as a cafeteria. Each of the buildings had evaporative cooling but no central heat. School A had an enrollment of 340 students in grades one through four in 1960. It had ten classrooms in four barrack buildings. There was a cafeteria which seated 220 children, a nurse's room, a projection room and restrooms. A movie projector and two film strip projectors were available. The library of the school had about 300 books in it and the teaching staff could draw other books from the district's central library. At the time of this study, the ownership of part of the school ground was contested because of improper recording of deeds dating back to territorial days. A church had been awarded a portion of this land by the state, while a strip of land through the present school site was privately owned. The school district owned about one-third of the present school site and for several years had been trying to procure the remainder.

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[17] An observation from case records.

COMMUNITIES B AND C

__Some general characteristics__. Schools B and C were located in essentially the same community. Because they were more alike than different, they were herein considered as one community. The school boundary lines joined, and both schools were in the same elementary district. The latter encompassed the center of the business section of an urban area of about 300,000 people.

These schools were selected for participation in the study partly because much of the population of their communities spoke both Spanish and English with Spanish being the basic language of the majority.

Communities B and C were commercial and industrial in nature with major highways and railroads intersecting them. Geographically, they were on the fringes of the "downtown" part of a city; thirty to forty years ago they were completely residential. Their neighborhoods had gradually become "gray zones" with the coming of numerous commercial establishments and warehouses in the area.

Included within the communities was a four-square block section which was a little community within a community--an island in the city--a frequent gathering place for neighborhood "cliques" and an area of crowded and inexpensive housing. This small area, although in about the geographic center of the city, was outside its corporate limits and thus was not entitled to city services, such as police and fire protection, sewage disposal, and street maintenance. This small area was frequently referred to in rather uncomplimentary terms. Therefore, many of the children coming from this section were either ashamed to state where they lived or were overly defensive about it. Families of a number of the "study" children lived here.

__Homes of the children in Communities B and C__. Homes of the children in Communities B and C varied from simple structures of tin and cardboard siding to rather good homes of adobe, frame, and masonry construction. Most of these homes were erected in the 1930-1940 era. Although 64 per cent of the families rented their dwelling units, these families had lived in the same house an average of seven years. There were indications that the length of time families stayed in one place was in relationship to their economic status. For example, case records revealed that:

> Mr. and Mrs. H. have lived in the general area of (B) School for a number of years and like it very well. 'We get along with our neighbors because we only nod our heads to everyone and say "good morning" and "good night" and that is all.' The H.'s indicated they feel their neighbors are essentially all right. 'Once in a while on Saturday night, the ones across the street get drunk and make noise, but that doesn't bother us. The only drawbacks to the neighborhood are things we can't do anything about, like the planes that fly over our heads and make so much noise they wake the children.' In response to a question as to what they really wished for in way of a home, there were spontaneous and emphatic strivings expressed. 'We talk about wanting a new house--a home of our own--all the time. We are trying to find a way--it almost seems hopeless at times.' The H. family would like to live in X area, 'on a lot all by ourselves.' They realize they probably would be paying for the home a long time - 'Maybe we would die before we got it paid for, but then the children would have something.'[18]

The average rent of the families in Communities B and C was $26 per month. Seventy per cent of the families interviewed lived in single family dwellings which ranged in size from one to seven rooms. The majority of the families occupied three to four room dwellings and there was an average of seven persons per family. Case records revealed the following:

> The C. family, with six members, occupy a three-room house which has one gas heater and no indoor toilet. Mrs. C., whose husband is a diabetic, feels the family is much too crowded and really needs at least one more bedroom. 'Now that the girls are getting bigger, they shouldn't be in our room.' For the house they are renting, they pay $20 a month plus utilities. Since the house has no bathroom, a tub has to be brought into the kitchen and the water heated on the gas range when the family members wish to bathe. Because of his diabetic condition, Mr. C. should bathe every day, but according to his wife, 'He's lucky if he gets a bath twice a week.'[19]

Nearly all of the homes in Communities B and C had electricity. However, only 54 per cent had both hot and cold water. The others had only a cold water tap in the house, or one on the outside. Eight per cent of the homes visited were in the latter category. Usually several families shared this one facility. Most of the homes were heated with gas and the majority had some form of cooling; the latter was most often an inexpensive type of evaporative cooler. Although Communities B and C were located in an urban area, approximately one-fourth of the families used outdoor toilet facilities, even though there was a city ordinance banning such toilets.

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[18] Excerpt from a case record.

[19] *Ibid*.

It was evident that television played an important role in the lives of the people in this area, since 91 per cent of the dwellings visited had television. There were telephones in 67 per cent of the homes. The social worker's observation disclosed the nature of one such dwelling:

> The S. house is in an area comprised of modest homes, most of which are lived in and built by the owners. The area has long been known as one of the poorest districts in the (C) School area. However, in recent months, the streets have been paved and curbing has been put in which gives the neighborhood a generally better look.
>
> The S. home has a rather large front yard which seems to be devoted mostly to play area for the children. There are trees but no grass. The family members are gradually making a few improvements on the home. They are doing it themselves since 'we have no money.' The room in which the visit took place had been added to the house since it was originally built. There were curtains at the windows and the walls had been freshly plastered and painted. The floor, while made of a rather crude cement, was neat and clean and was partially covered by scatter rugs. There were several easy chairs, a sofa, and some small tables, one of which held the television set which commands an important place in the room. At the time of the interview Mr. and Mrs. S. were watching TV and upon my entry, they turned the sound down but did not turn off the picture. They were watching what I guessed was one of their favorite programs--a drama in which the characters were definitely Mexican, but the conversation was in English. The parents mentioned the television had done much to help the family learn English, particularly the children.[20]

Recreation in Communities B and C. There were three public parks in areas B and C, all of which provided recreational programs under the direction of the city. A branch of the public library, in addition to the usual library services, offered story periods, film presentations, and TV rooms.

Various forms of commercial recreation were also available to families of Communities B and C because they were in "downtown" which was within walking distance from their homes. There were a number of commercial theaters which families attended. These showed both Spanish-speaking and "American" movies. The families of Communities B and C were also located where they could participate in such community celebrations as the 16th of September and the Cinco de Mayo. Case records showed:

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[20] *Ibid.*

> A question concerning things the family liked to do for fun brought response from Mrs. A., who indicated her children are permitted to go to the park in the summer time for games and swimming. Now and then the family goes on a picnic when they can afford the gasoline to take them out of the city. They also like to go to the baseball park for the 16th of September celebration which all members of the family enjoy. On the whole, however, the most of the A.'s recreation takes place right in their own home. All members of the family like TV. Mrs. A.'s mother does not get quite as much pleasure from this as do the others since she speaks only Spanish. This also raises a question when they go to a movie. The grandmother likes the pictures in Spanish and Mr. and Mrs. A. enjoy these also. But the children do not like the Spanish-speaking movies at all.[21]

Of the families in the study whose children remained throughout the three year period, there were 59 per cent who had no active membership in any clubs or organizations, including church auxiliaries or PTA groups. But the remaining 41 per cent did have affiliation with one or more organizations, and there was indication, judging from responses in interviews with parents and community leaders, that certain clubs and organizations in the area were important in the lives of the people there. The most frequently mentioned single social center in the area was the American Legion club. It not only provided its members with a place to gather for dances and parties, but also performed charitable civic and advisory services for its membership. The Mexican Chamber of Commerce sponsored dances and community celebrations for the perpetuation of Mexican culture. Still another private club, the "V-Club" whose influence was broadly felt, was dedicated to the promotion of educational opportunities through scholarships to promising Spanish-speaking young people. An insurance group, functioning in much the same way as the Woodmen of the World, also drew heavily on the area for membership.

Religious and social service organizations. There were several churches located in the district which, in addition to being religious centers, also directed some community activities. Most of the families interviewed were of the Roman Catholic faith. In Communities B and C, there were only a few who belonged to any other church, but there were several Protestant Churches in the area which performed community services. The churches most frequently mentioned in interviews and those which seemed to wield considerable influence on the people in the area were two Roman

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[21] *Ibid*.

Catholic churches which served both Communities B and C. The priest of one of these was interviewed as a community reference, and made a number of observations. He was asked to comment on the seemingly high rate of divorce and separation and the large number of marriages not consummated by the church among the parents of the "study children." (Thirty-four per cent were separated, divorced, or not living together.) He said, "They are confused by a law passed by the President of Mexico in 1924, requiring that they be married by the law prior to any religious ceremony. This made it more difficult for them to understand that they also had to be married by the Church in order to fulfill the tenets of their faith."[22] The priest mentioned that Spanish-speaking men hesitate to be married by the church because it "ties them too much." A civil marriage is less binding and consequently constitutes "a threat which they have over their spouses."

There were several social service organizations which served Communities B and C in addition to the churches. There were two "neighborhood houses" which assumed positions of leadership through their services to many of these families. An interview revealed:

> Both parents in the R. family, upon being asked questions having to do with community leadership, identified Mrs. S. at a neighborhood center as a 'very sympathetic, good person' to whom they could turn when need arises. The center was instrumental in securing Mr. R.'s present job and has been very helpful in getting both parents enrolled in English classes in preparation for becoming U.S. citizens.[23]

In another record, a mother being interviewed said Mrs. T., a full-time group leader at one of the neighborhood agencies, had been a "friend to the people in the neighborhood." The mother continued:

> "I have been knowing Mrs. T. for many years and she has helped me lots of times. Like the time when Conchita was in the Girl Scouts. Mrs. T. paid her fees and got her uniform. Otherwise she couldn't attend."[24]

According to the mother, Mrs. T. "gives advice to families on many matters and helps us with papers we don't understand."

In addition to one or two other private agencies located in the area, there were two public agencies, the Department of Public Welfare and the County Hospital, which were called upon frequently to render aid to residents of the area. A high proportion of families in the study depended upon welfare aid for economic support. Of the families included in the sample for these schools, approximately one-fourth received this form of financial assistance.

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[22] From an interview recorded in case records.

[23] *Ibid.*

[24] *Ibid.*

Employment. At the time of the study, most of the income of the families in Communities B and C was derived from salaries and wages for services performed in a variety of occupations for the most part located outside the limits of the area. They worked at such jobs as truck driving, construction labor, gardening, restaurant work, city streets department labor, and laundries. Only a small portion were self employed and relatively few mothers were employed either part time or full time. The following excerpt from a case record illustrated this:

> The L. family had one of the better incomes of families visited in this area, but both Mr. and Mrs. L. are employed, he as a laborer for an exterminating company and she as an attendant at City Hospital. Their combined income is $4500 per year which, according to them, is much 'better than we used to have it.'[25]

Work was less seasonal in Communities B and C than in Community A, but even here many of the families felt the frequent pinch of unemployment and some wage earners were constantly on the margin between employment and unemployment. As an example:

> The financial straits which the G. family have been in during the past few months was a topic of great interest in this interview. Mr. G. has not had any work for the past several months and Mrs. G.'s mother, who lives next door, has practically had to maintain the family since the father's last job. They are behind on rent and the gas and electricity have been cut off. The hospital, where they had to take the baby when he was sick last time, threatened to sue them for non-payment of their bill, but Mr. and Mrs. G. laughed rather unmirthfully at this, saying, 'If they did sue, what could they get?'
>
> Mr. H. has worked for the X cotton products company as a maintenance man for the past four years. He likes his job and says the bosses are good to him. He earns $1.50 an hour and works six days a week, but says he considers this better than 'common labor.' Mr. H. likes this job also because his contacts with Anglo people in his work has assisted him in learning English.[26]

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[25] Ibid.

[26] Ibid.

One of the best incomes of the families visited was earned by Mr. T., one of the few fathers who were self employed. The record showed:

> Mr. T. derives his livelihood from hauling cotton, grain, and other farm products in trucks which he owns. According to Mr. T., he has saved enough to pay off all indebtedness against his trucks and his home. It is obvious from the appearance of the house that this family enjoys a much better standard of living than do most people in the neighborhood.[27]

School B. This school was located seven blocks from the midtown business section of the city and was amid an industrial and warehouse neighborhood. Its attendance boundaries had been shifted through the years in order to meet the population mobility of the city.

The first eight rooms, consisting of the main part of the school plant, were constructed in 1912. In 1927, eight additional rooms and an auditorium seating 300 were added. In 1941, six classrooms were added and as late as 1957, a serving room for cafeteria services was built. (Food was prepared in another school and brought to School B for serving.) Also, in 1957, an orthogenic cottage was built and was used to house a special class of lower I.Q. children of intermediate school age. All of the buildings, except the orthogenic cottage, were of brick construction. Each room had evaporative cooling and "light-out" curtains, adequate storage, a sink, and modern fluorescent lighting.

The school site was adjacent to warehouses and truck routes. The entire school lands totaled 1.9 acres.

The school contained kindergarten through seventh grade and had an enrollment of approximately 630. About 78 per cent of this population was of Mexican background, 20 per cent Negro, and two per cent Anglo. There was an average of 26.2 pupils per classroom. The full-time school secretary spoke Spanish as did the school attendance worker. A school nurse was available half time and a general health clinic operated weekly. This clinic diagnosed and treated a wide range of pupil health needs. A counselor worked for School B two days per week. This staff member worked cooperatively with welfare offices, juvenile court, families, and law enforcement officers. A full-time librarian-audio-visual person also worked for the school. The central library of the district contained 12,000 volumes and the school drew from an excellent district audio-visual center.

The sixth and seventh grades received instruction in homemaking and vocational education. The sixth grade was transported once a week to another school in the district for these programs; the seventh grade had such instruction twice weekly. There was no other bus service in School B.

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[27] Ibid.

Although some pupils walked 1.2 miles to school daily, there were only about 10 bicycles among the student body.

The hot lunch program served approximately 60 per cent of the pupils daily. About half of this group did not pay the twenty cent daily lunch charge. This arrangement was made by parents and school officials.

The playground contained swings, slides, cemented areas for games, a dirt basketball court, a broadjump pit, and a softball diamond. The kindergarten play area was separated by a fence and contained slides and climbing bars.

School C. This school was located in a part of the city that formerly was an upper class neighborhood. Many high ranking citizens of the state, including U.S. senators and mayors, were graduates of this elementary school. In 1914, the year of its construction, it was the showplace of the city. It had porticos and columns which were reminiscent of the early 1900's. Its exterior walls were brick and the interior walls were conructed of 18 inch poured concrete. In the 1920's a basement was dug beneath the building in order to enlarge the school plant. No major remodeling had occurred since; the present building contained twenty-six classrooms.

This school drew its 625 pupils from the mid-town area of the city. About 300 of these youngsters were transported to school by bus. Negroes, white, and Indian pupils totaled approximately 10 per cent; 90 per cent of the youngsters were of Mexican descent.

Twenty-five full-time and six part-time teachers provided instruction from kindergarten through the eighth grade.

School C had a library and cafeteria in addition to its offices and classrooms. It was a two-story building with a basement. Special services to students were provided by a nurse who worked three hours daily, a counselor who worked two days weekly, and a speech correctionist who spent about one-fifth time at the school. A full-time librarian, two recreation leaders, and two special teachers of the mentally retarded worked in School C. There were three kindergarten sections. Vocational education classes, in the form of shop and homemaking, were taught in grades six, seven, and eight. An instrumental music teacher worked with grades four through eight. Art instruction was provided in the sixth, seventh, and eighth grades.

Since School C was located on a major highway which bisects the city, most of the school site was enclosed by a wire fence. The site contained 2.1 acres and therefore provided limited space for diversified recreation.

Summary

This chapter has described the physical setting of the study, the community environment, some of the characteristics of the three schools, and the homes of the students in the study.

The purpose of detailing such a setting was to enable the reader to relate descriptive findings about the mental abilities of the children in this study to the physical-social milieu in which these children live and grow.

The general setting of this study indicated that the economic conditions of the children in this study was precarious. Those adults who were employed were generally engaged in non-skilled job classifications. The children in this study lived in crowded housing for the most part. They lived in bilingual and bicultural homes and neighborhoods. They attended schools which were in the "gray-zone" of the city or schools which were built of post-war barracks. Some of the conveniences of modern homes were missing in many of the homes of these youngsters--telephones, hot and cold running water, central heating, modern toilets.

This chapter identified several of the daily forces which shape the thinking and condition the actions of the children who are the central concern of this study.

CHAPTER V

THE CHILDREN IN THEIR EDUCATIONAL SETTING

In the last chapter, a backdrop of the community setting of the bilingual children in this study -- a description of the type of social environment in which they live, was presented. The purpose of this chapter is to provide a quantitative description of the children of this study as a group -- a description in terms of tests and measures and specific home characteristics, much as might be found in the records of any school which attempted to provide the teachers with some evidence of the abilities and comparative achievements of their pupils.

In keeping with the general approach of this study, no attempt has been made to use the quantitative information obtained to test hypotheses about these bilingual children or the factors which may influence their test performance and school abilities. Rather, the tables and figures of this chapter have been designed solely for the purpose of describing and suggesting those areas where attempts at rigorous experimental verifications are likely to be most profitable. Some suggestions as to the kind of information which might be gathered by those interested in this latter approach have been offered in the recommendations for further study and action found in Chapter VII.

Overall Description

Several family characteristics which would seem to be especially important when considering the abilities and school achievement of children have been summarized in Table 1. As is also true with much of the data to be found in subsequent tables and figures of this chapter, complete information on the characteristics described in Table 1 was not available for some children. Whenever this occurred, the descriptive indexes were computed on those for whom data was obtained and the number of cases involved reported along with the results.

It is immediately apparent from Table 1 that the families of the children in this study are far from that idealized typical American social unit. But this is not the whole story. The contrast becomes even more vivid when it is noted that the median number of siblings is approximately twice the national average and that over nine per cent of the children come from homes with 10 or more children; that while among the majority racial group in the state, the average grade completed is nine plus, 9.2 per cent of the fathers of the children in this sample for whom the information is known had no schooling and only four per cent had ever completed high school.

TABLE 1. MEDIAN AND QUARTILES OF VARIOUS FAMILY CHARACTERISTICS

Characteristics	N	Q_1	Mdn.	Q_3
Number of siblings per family	119	2.32	4.36	5.80
Grade completed by father	98	2.22	5.06	8.02
Yearly family income in dollars	80	1686	2[illegible]	3900

Although 50 per cent of the children in the study came from homes with total yearly family incomes from $1686 to $3900, the median of $2161 places these families in the bottom quartile nationally. At the extremes, some families reported an annual income of only $900 and one family had a reported income as high as $8000.

The source of such incomes varied from public assistance alone through work at part-time cotton picking and other unskilled jobs to full-time employment in skilled crafts such as plasterer and chef. One income came from ownership of a trucking business.

From the data reported in Figure 1, it is apparent that by the first grade, children in one of the schools are already a year older than normally expected. In all three schools, the median age of the children is greater than that of their contemporaries by the time they are in the second grade. The fact that these bilinguals show a greater retardation (in terms of age) from first to second grade in some of the schools than they do in others, suggests that there may be differences among the schools with respect to promotion policies.

In terms of these family and personal characteristics, then, the children of this study come from homes with very low income, have fathers with little education, and are older than their contemporaries in grades 1 through 4 throughout the rest of the country.

Similarly, the bilinguals of this study do not perform typically on tests of mental ability and school achievement. From the complete summary of the results of all the tests administered as a part of this study, presented in Table 2, it is obvious that bilingual children appear to be retarded whether the measure is one of achievement in reading, in language, or in arithmetic, one of ability whether measured by performance tests or with verbal tests.

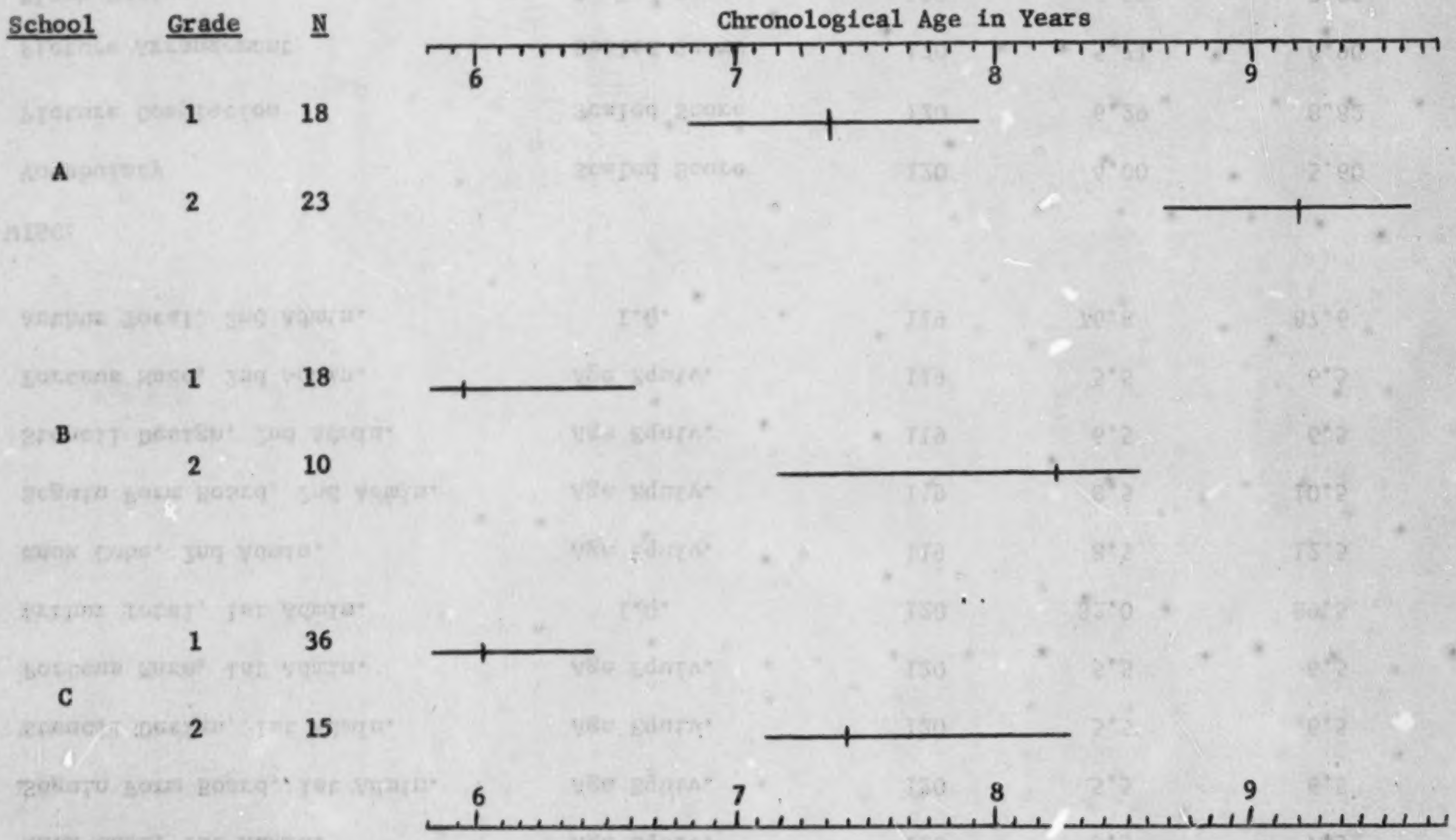

Figure 1. Median and interquartile range of chronological ages of the subjects in the first year of the study.

TABLE 2. MEDIAN AND QUARTILES OF PERFORMANCES ON ALL TESTS

Test	Type of Derived Score	N	Q_1	Mdn	Q_3
Grace Arthur Point Scale:					
Knox Cube, 1st Admin.	Age Equiv.	120	5.5	7.5	10
Seguin Form Board, 1st Admin.	Age Equiv.	120	5.5	6.5	7.5
Stencil Design, 1st Admin.	Age Equiv.	120	5.5	6.5	7.5
Porteus Maze, 1st Admin.	Age Equiv.	120	5.5	6.5	6.5
Arthur Total, 1st Admin.	I.Q.	120	82.0	89.5	98.8
Knox Cube, 2nd Admin.	Age Equiv.	119	8.5	12.5	15
Seguin Form Board, 2nd Admin.	Age Equiv.	119	8.5	10.5	12.5
Stencil Design, 2nd Admin.	Age Equiv.	119	6.5	6.5	8.5
Porteus Maze, 2nd Admin.	Age Equiv.	119	5.5	6.5	6.5
Arthur Total, 2nd Admin.	I.Q.	119	76.8	87.6	102.2
WISC:					
Vocabulary	Scaled Score	120	4.00	5.60	7.20
Picture Completion	Scaled Score	120	6.29	8.82	10.95
Picture Arrangement	Scaled Score	120	5.71	6.90	8.68
Block Design	Scaled Score	120	6.59	7.95	9.81
Object Assembly	Scaled Score	120	6.58	8.45	10.23

TABLE 2. (Continued)

Test	Type of Derived Score	N	Q_1	Mdn	Q_3
Otis Alpha	I.Q.	87	75.7	82.7	92.2
Otis Beta	I.Q.	20	87.5	91.0	98.5
Gates:					
Reading Readi. Picture Directions	Percentile Rank	78	16.1	45.0	65.2
Reading Readi. Word Matching	Percentile Rank	78	54.6	74.9	85.2
Reading Readi. Word Card Matching	Percentile Rank	78	50.4	80.2	95.4
Reading Readi. Rhyming	Percentile Rank	78	59.6	79.9	90.3
Reading Readi. Letters & Numbers	Percentile Rank	78	11.9	30.8	50.1
Primary Reading, Word Recognition	Grade Placement	103	1.46	1.84	2.20
Primary, Paragraph Reading	Grade Placement	103	1.64	1.85	2.12
Advanced, Word Recognition	Grade Placement	74	2.04	2.39	2.82
Advanced, Paragraph Reading	Grade Placement	74	1.98	2.40	2.92
California Achievement:					
Reading Vocabulary	Grade Placement	22	1.9	2.3	3.3
Reading Comprehension	Grade Placement	22	3.2	3.75	4.2
Reading Total	Grade Placement	22	2.3	2.6	3.4
Arithmetic Reasoning	Grade Placement	21	3.2	3.6	4.0
Arithmetic Fundamentals	Grade Placement	21	3.3	3.9	4.3

TABLE 2. (Continued)

Test	Type of Derived Score	N	Q_1	Mdn	Q_3
California Achievement:					
Arithmetic Total	Grade Placement	21	3.48	3.70	4.09
English Mechanics	Grade Placement	22	2.8	3.8	4.5
Spelling	Grade Placement	22	3.5	4.2	4.8
Total Language	Grade Placement	22	3.10	4.15	4.80
Stanford Achievement:					
Paragraph Meaning	Grade Placement	32	2.05	2.70	3.05
Word Meaning	Grade Placement	32	2.35	2.71	2.85
Spelling	Grade Placement	32	2.15	2.65	3.45
Language	Grade Placement	22	1.04	2.60	3.38
Arithmetic Reasoning	Grade Placement	32	1.85	2.50	3.00
Arithmetic Computation	Grade Placement	32	2.60	2.97	3.22
Total Battery (Mdn)	Grade Placement	32	2.05	2.62	3.12

While most of the measures of so-called mental ability -- the Arthur, the WISC, and the Otis, for example -- show median performances which seem to center about one standard deviation below the mean, no such consistency seems to exist in the achievement area. With respect to the reading tests, for example, the median grade points are about .15 lower than expected grade level in the second grade; about .60 below the expected level in the third grade; and about 1.5 below the expected level in the fourth grade.

The findings with respect to the California Achievement Test (administered in the fourth grade) are particularly interesting in that the greater deficiency is in reading vocabulary rather than reading comprehension. This is consistent with the finding that the vocabulary sub-scale on the WISC was approximately one and one-half standard deviations below the mean rather than the one standard deviation below found overall on tests of general ability.

On the other hand, achievement in arithmetic varied from .1 to 1.17 grade placement below expectation, while achievement in English varied from .2 above to 1.00 grade placement below expectation -- neither with any clear pattern of change.

Notable exceptions to the general trend of apparent retardation are the Knox Cube and the Seguin Form Board sub-tests in the second administration of the Grace Arthur Point Scale, and the high percentile ranks for the word matching, word card matching and rhyming sub-tests of the Gates Reading Readiness Test. Why the median scores should represent age equivalents of 12.5 and 10.5 respectively for the Knox Cube and the Seguin Form Board is difficult to understand. It could be the result of irregularities in testing such as examiner differences. However, in view of the great magnitude of the change from the first to the second testing and the fact that other tests do not seem to show such differences, this appears to be unlikely. It has been suggested by some that there seems to be a point where bilingualism ceases to hinder and starts to help in such performances. If this is so and the point at which the change occurs varies from one type of test to another, this could be a possible explanation. A somewhat more likely possibility stems from studies which suggest that there are marked practice effects on certain sub-tests even over a period of two years, and by others which suggest that the norms for certain sub-tests are much too high. Some combination of marked practice effects plus overly rigid norms on sub-tests other than those in question might result in apparent changes such as those observed.

The most reasonable explanation of the unusual performance on the word-matching, word card matching and rhyming sub-tests of the Gates Reading Readiness Tests seems to be simply that these tests are easier for bilinguals. As contrasted with the other two sub-tests which require certain background experiences which most American children have, the only requirement for sub-tests 2, 3, and 4 is that the child be able to match what could be meaningless symbols and sounds. This still, however, leaves the question as to why performances should be so much better than that of the first graders in the standardizations group. It is possible that this is the result of the fact that overall, our bilingual group is older than average for the first grade. This possibility seems less likely, however, when it is noted that the same phenomenon occurs in the two schools where the median age is close to six as well as in the one school where the median age of the first graders was around seven.

To complete the overall description, a summary of the results of the teacher descriptions of various personality traits and of language facility characteristics is presented in Table 3 and Table 4, respectively.

In each case, the proportion of children placed in each category is shown for each of the three successive years of the study. The percentages shown do not always add to exactly 100 because some of the teachers checked more than one category for some children and not any category for others.

By far the most striking thing about these results is a relative stability of the ratings. There is no clear-cut instance of change over the three year period. It is interesting to note that in spite of the test results, the teachers rated approximately half of the children in the study as having average intelligence. Other than this, interpretations are best made by study of individual items.

Evidence of Pseudo Retardation

One of the major concerns of this study was the question as to whether whatever retardation appeared was real or pseudo. Some of the test data obtained shed light on this issue.

Probably the first thing which comes to mind when the question is raised of whether the retardation as observed in the last section was real or pseudo -- that is, due to language, cultural and socio-economic limitations -- is a comparison of performances on different types of tests. If, for example, language has an important influence on the scores, then, overall, it should be possible to note differences in performances on tests depending to different degrees on verbal facilities with the English language. Accordingly, the median and the upper and lower quartiles were computed for the 87 subjects for whom scores were available on the first Grace Arthur Point Scale, the Otis Alpha Test, and the WISC vocabulary sub-test.[1] It is quite obvious from the results of these computations, presented in Figure 2, that the estimated I.Q. for these children depends upon the extent to which the materials used are verbal. Even with the Grace Arthur Point Scale, however, the estimated intelligence levels of the children are well below average. Actually, it represents about the same deviation below average as is found for other economically low groups.

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[1] Although it is not a generally accepted practice to estimate I.Q. from one sub-test of the WISC alone, it was felt that, in this case, where the interest was in a general trend, even a rough estimate from a highly verbal test would be helpful.

TABLE 3. PERCENTAGE OF CHILDREN RATED BY THEIR TEACHERS IN EACH RESPONSE CATEGORY OF VARIOUS PERSONALITY TRAITS

	Percentage			
Trait	57-58	58-59	59-60	Response
COOPERATION	46	54	52	Enters freely and helpfully
	27	22	23	Takes part only when satisfaction likely
	17	16	17	Prefers to do things himself
	08	04	04	Does not try cooperation
	02	00	03	Definitely resistant to cooperation
	00	00	00	No opportunity to observe
SOCIAL DEVELOPMENT	57	53	61	Feels secure and accepted by groups
	28	27	29	Some anxiety, but seems accepted
	10	09	05	Desire to be accepted, treated indifferently
	04	05	03	Withdraws and hinders acceptance
	02	02	01	Rejected by all groups
	00	00	00	No opportunity to observe
RESPONSIBILITY	22	30	29	Assumes responsibility, carries through
	32	30	29	Applies himself conscientiously to assignments
	13	13	14	Usually carries through, w/ occasional reminders
	12	07	14	Persistence in own interests, less in others
	21	15	12	Needs prodding in easy undertakings
	00	00	00	No opportunity to observe
INFLUENCE	00	05	08	Habitually controls activities of others
	19	21	19	A leader, but will accept group decisions
	12	17	05	Strongly influences activities of others
	16	19	15	In certain groups is a leader
	47	39	37	Carried by nearest or strongest influence
	00	00	01	No opportunity to observe

TABLE 3. (Continued)

Trait	Percentage 57-58	58-59	59-60	Response
CONCERN for OTHERS	52	60	52	Shows consideration of himself & others equally
	08	04	05	Certain problems of group interest him
	34	26	37	Uninterested in others unless he is affected
	02	02	01	Talks about others' welfare but does nothing
	03	02	02	No opportunity to observe
RESPONSIVENESS	19	22	25	Unusually responsive to all he contacts
	34	40	33	Responsive to most persons he contacts
	23	19	25	Responsive to selected group or individuals
	19	11	12	Tends to be unresponsive
	05	02	02	Unresponsive, apathetic
	00	00	00	No opportunity to observe
TENACITY of PURPOSE	32	34	34	Has definite plans, carries to completion
	19	14	24	Has short-time projects, no long-term goals
	22	22	22	Usually easy-going, but capable of seriousness
	06	01	07	Makes plans but doesn't always carry them out
	20	22	11	Vaguely conceived plans which never bear fruit
	00	01	02	No opportunity to observe
CREATIVENESS	11	12	09	Uses imagination & originality in tasks
	26	19	24	Original contributions in one or more areas
	17	17	29	Promise of originality but no distinction yet
	27	27	20	Little creative contribution - but can use others'
	19	20	11	Unimaginative - no evidence of originality
	01	00	02	No opportunity to observe

TABLE 3. (Continued)

	Percentage			
Trait	57-58	58-59	59-60	Response
EMOTIONAL CONTROL	20	14	22	Rigid control of emotions
	33	43	42	Emotions controlled but spontaneity allowed
	23	19	22	Very spontaneous but not over-emotional
	13	07	08	Tends to be over-emotional
	11	10	04	Too easily depressed, irritated or elated
	00	01	00	No opportunity to observe
ATTENTION	14	13	16	Preoccupied with work; not easily distracted
	37	43	36	Normal distractions but efficiency not impaired
	29	21	40	Distracted by chance stimuli or own ideas
	14	14	06	Wandering, inconstant
	06	03	02	No opportunity to observe
SELF-CRITICISM	08	07	07	Too self critical-thinks successes are failures
	52	46	41	Has normal insight into work
	19	22	14	Realization of failure expressed verbally
	07	11	20	Realization of failure expressed facially
	12	09	14	Has no realization of failure
	02	00	01	No opportunity to observe
PHYSICAL DEVELOPMENT	09	09	02	Good coordination-excels in physical feats
	12	07	07	Above average in coordination, physical feats
	68	65	63	Average in coordination & physical activities
	11	13	07	Below average in coordination, physical feats
	01	00	02	Uncoordinated, poor physical prowess
	00	00	17	No opportunity to observe

TABLE 3. (Continued)

Trait	Percentage 57-58	 58-59	 59-60	Response
COMPLIANCY	52	61	62	Complies with authorities readily
	19	17	17	Complies well but has some passive resistance
	25	16	18	Both complies & rebels, depending upon situation
	02	01	02	Tends to rebel but occasionally complies
	02	01	01	Continually rebels against authorities
	00	00	00	No opportunity to observe
INTELLIGENCE	04	03	07	Very bright, able to solve difficult problems
	12	17	16	Above average in intelligence
	57	51	47	Average intelligence
	23	21	26	Below average intelligence
	03	04	05	Very dull
	01	00	00	No opportunity to observe
TEACHER RELATIONSHIP	04	07	07	Strong emotional ties w/ teacher-expresses love
	22	32	23	Attached to teacher rather strongly
	61	41	53	Relates well to teacher but somewhat independent
	12	14	14	Slightly aloof toward teacher
	00	00	01	Rejects teacher strongly
	00	00	00	No opportunity to observe
CLASS BEHAVIOR	07	04	02	Frequently disruptive, difficult to control
	14	12	13	Occasionally disruptive-hard to control at times
	14	22	19	Neither disruptive nor very compliant
	39	35	32	Compliant & rarely causes commotion
	27	22	31	Very compliant, never disruptive
	00	00	00	No opportunity to observe

TABLE 4. PERCENTAGE OF CHILDREN RATED BY THEIR TEACHERS IN EACH RESPONSE CATEGORY OF LANGUAGE FACILITY CHARACTERISTICS

	Percentage			
Charact.	57-58	58-59	59-60	Response
TALKATIVENESS	17	14	12	Very talkative; disrupts class
	22	12	14	Above normal but doesn't disrupt class
	30	36	36	Average amount of conversation
	18	31	28	Very little spontaneous speech
	13	02	07	Talks only after much urging
	00	00	00	No opportunity to observe
UNDERSTANDING DIRECTIONS	41	40	45	Responds immediately
	22	21	17	Requests repetition
	06	05	01	Pretends he does not hear
	29	27	31	Responds after supplementary direction
	03	02	04	Responds before instruction is completed
	00	00	00	No opportunity to observe
LANGUAGE IN CLASS	51	25	34	Uses English exclusively
	37	59	39	Uses English mostly w/ some foreign language
	07	05	11	Uses English & foreign language equally
	03	04	13	Uses foreign language mostly w/ some English
	01	02	00	Uses foreign language exclusively
	01	00	00	No opportunity to observe
LANGUAGE ON PLAYGROUND	24	15	12	Uses English exclusively
	23	28	23	Uses English mostly w/ some foreign language
	14	08	12	Uses English & foreign language equally
	29	27	25	Uses foreign language mostly w/ some English
	08	08	10	Uses foreign language exclusively
	01	08	16	No opportunity to observe

TABLE 4. (Continued)

	Percentage			
Charact.	**57-58**	**58-59**	**59-60**	**Response**
LANG AWAY FROM SCHOOL	10	12	10	Uses English exclusively
	06	11	08	Uses English mostly w/ some foreign language
	04	06	08	Uses English & foreign language equally
	12	20	17	Uses foreign language mostly w/ some English
	08	27	19	Uses foreign language exclusively
	60	19	34	No opportunity to observe
ACCENT	07	01	03	Thick accent, difficult to understand
	18	12	06	Pronounced accent but can be understood
	36	46	40	Noticeable accent
	19	23	26	Very slight accent
	19	14	07	No accent
	01	01	00	No opportunity to observe
PRONUNCIATION	09	03	07	English pronunciation difficult; uses foreign ofte
	27	11	15	Some difficulty in Eng pronunc-uses some foreign
	16	28	28	Some difficulty in English pronunciation
	24	29	27	Slight difficulty in English pronunciation
	22	22	19	No difficulty in English pronunciation
	01	01	00	No opportunity to observe
WORD ORDER	04	05	04	Habitually reverses word order in English
	18	20	14	Often reverses word order
	10	10	12	Reverses order when excited or hurried
	41	40	40	Occasionally reverses word order
	20	17	19	Never reverses word order
	05	01	02	No opportunity to observe

TABLE 4. (Continued)

Charact.	Percentage 57-58	58-59	59-60	Response
UNDERSTANDING ENGLISH	30	32	32	No difficulty in understanding English
	35	47	47	Slight difficulty in understanding English
	14	13	11	English understood only if spoken distinctly
	04	02	05	Has great difficulty understanding English
	02	00	00	Understands little or no English
	02	00	00	No opportunity to observe
ATTITUDE TO ENGLISH	19	32	22	Great desire to learn & use English well
	46	41	33	Some desire to learn & use English well
	24	20	32	Learns & uses English because expected
	00	00	01	Slight bias against English usage
	02	01	01	Great bias against English usage
	02	00	06	No opportunity to observe
SELF EXPRESSION IN ENGLISH	16	15	18	No difficulty in expressing self in English
	49	46	45	Occasional difficulty in expressing self
	25	27	23	Can express self only in simple concepts
	07	07	11	Great difficulty in expressing simple ideas
	02	00	00	Unable to express self at all in English
	01	00	00	No opportunity to observe

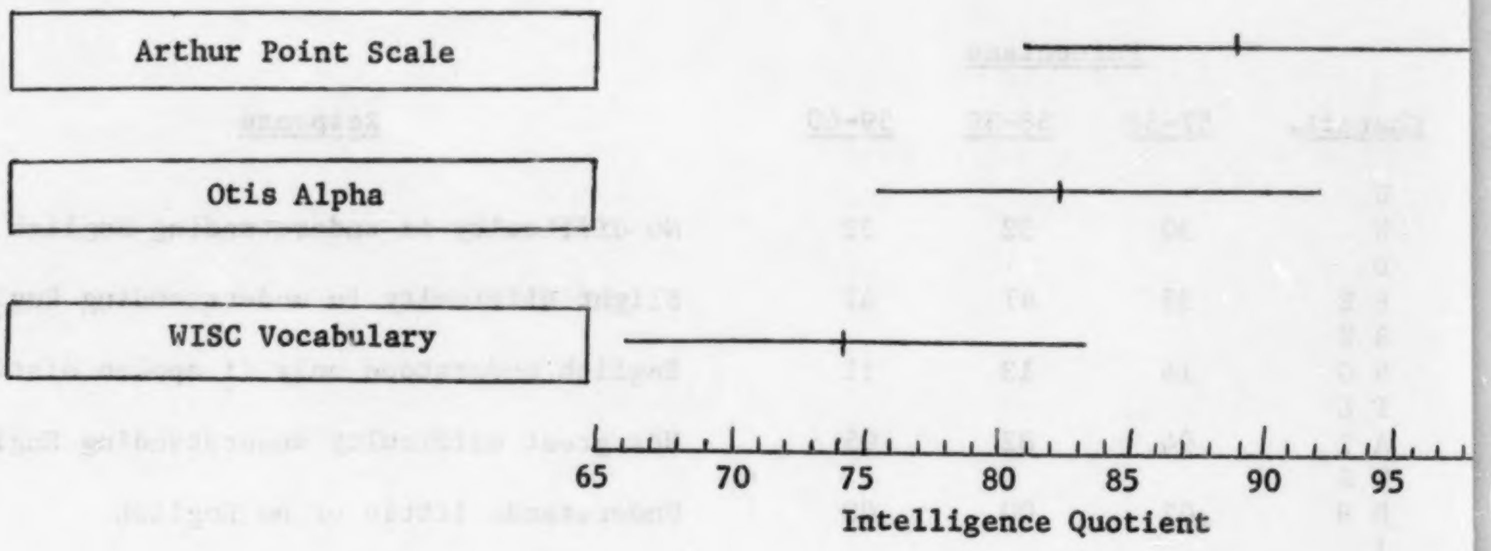

Figure 2. Median and interquartile range of I.Q.'s estimated from various mental ability tests.

A second kind of information which might provide suggestions as to whether the retardation was real or pseudo comes from an examination of changes in performance over time and the relationship of these changes to the general neighborhood environment and parental attitude. If the retardation is real, it would be expected that performance might become relatively worse with time, while if it were a retardation resulting from linguistic, cultural and socio-economic factors, it might be expected to show no such specific trend, but rather improve or fluctuate, and/or perhaps be related to cultural-socio factors.

Consequently, the median and inter-quartile ranges for each performance on tests administered twice were computed and plotted separately for each school as representative of a somewhat different socio-cultural environment. Viewing Figures 3, 4, 5, and 6 as a whole, it is difficult to say whether the differences observed are the result of different testers, general unreliability of the tests, artifacts due to small numbers in some instances, or what. About the only suggestion of a consistent trend in spite of a fluctuation is a general tendency for the change in performance for those children in School B to be greater in a positive direction than that of those children from School C.

To see if there were any suggestions of a specific home influence on change in performance on the mental ability tests, the subjects were first divided by the social worker into three groups according to the general attitude and aspirations of the child's parents or guardians. Into one group, there were placed those who held some hope and encouragement that through education their children might better themselves. Take family F., for example:

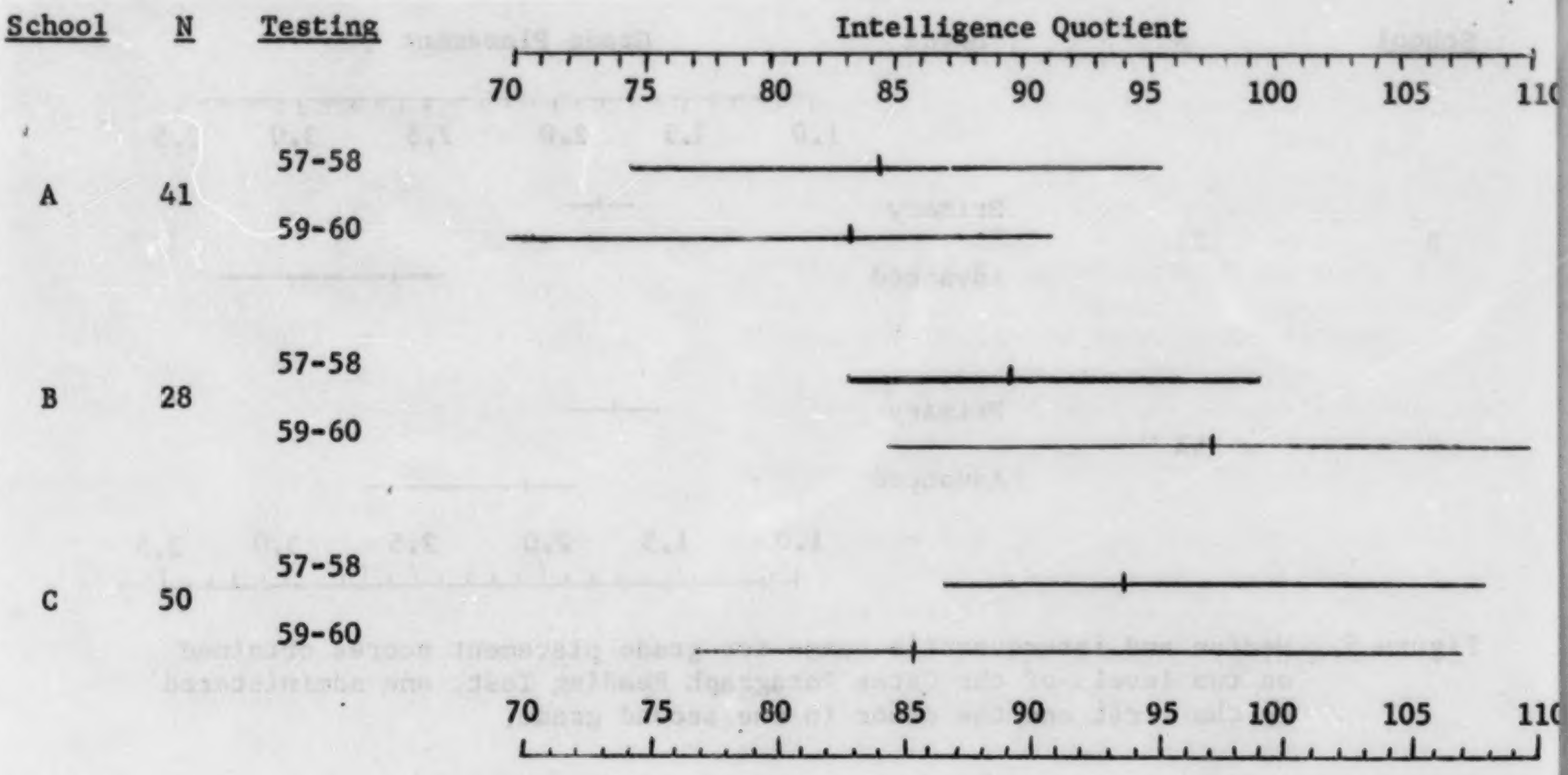

Figure 3. Median and interquartile range for I.Q.'s obtained on two administrations of the Arthur Point Scale.

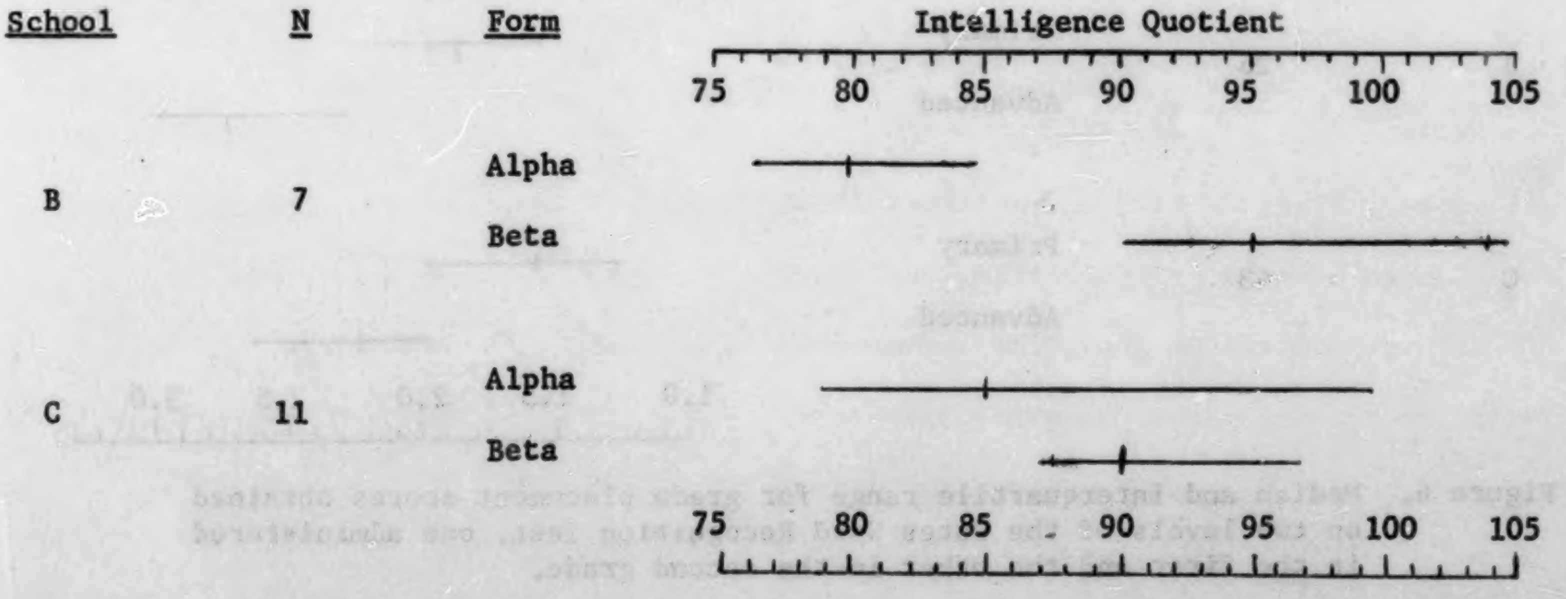

Figure 4. Median and interquartile range for I.Q.'s obtained on two forms of the Otis Test of Mental Ability administered two years apart.

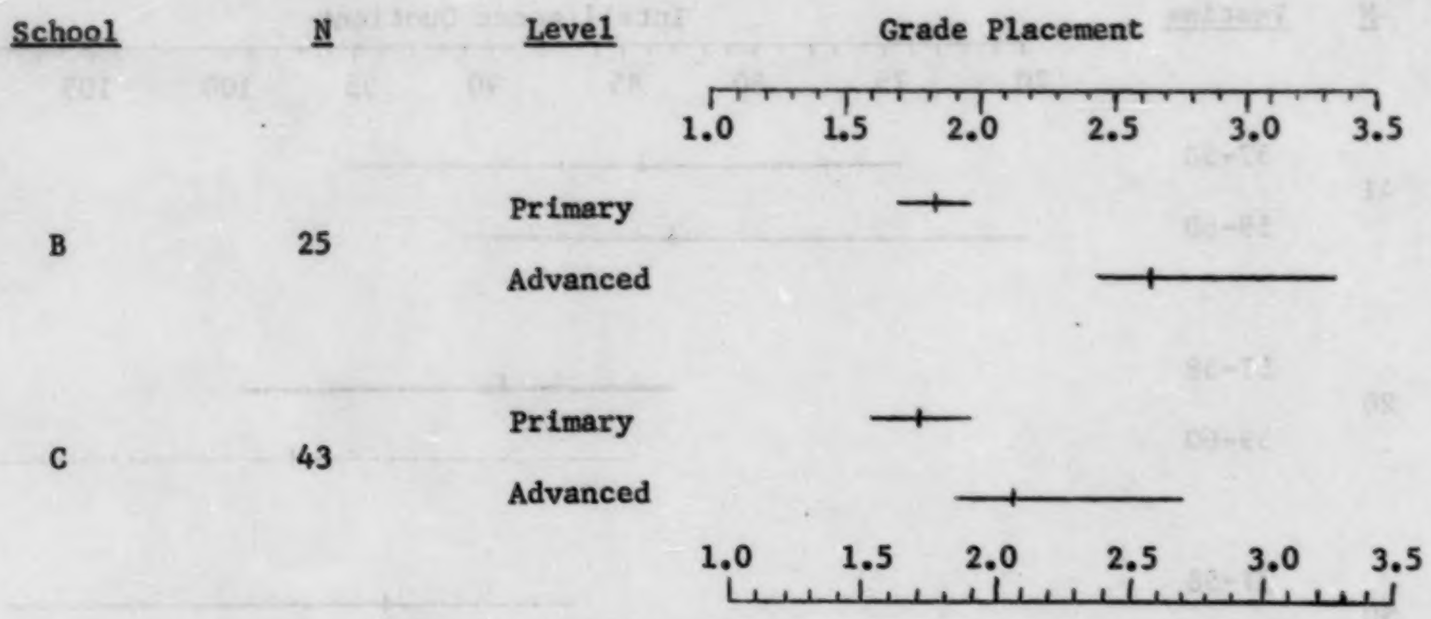

Figure 5. Median and interquartile range for grade placement scores obtained on two levels of the Gates Paragraph Reading Test, one administered in the first and the other in the second grade.

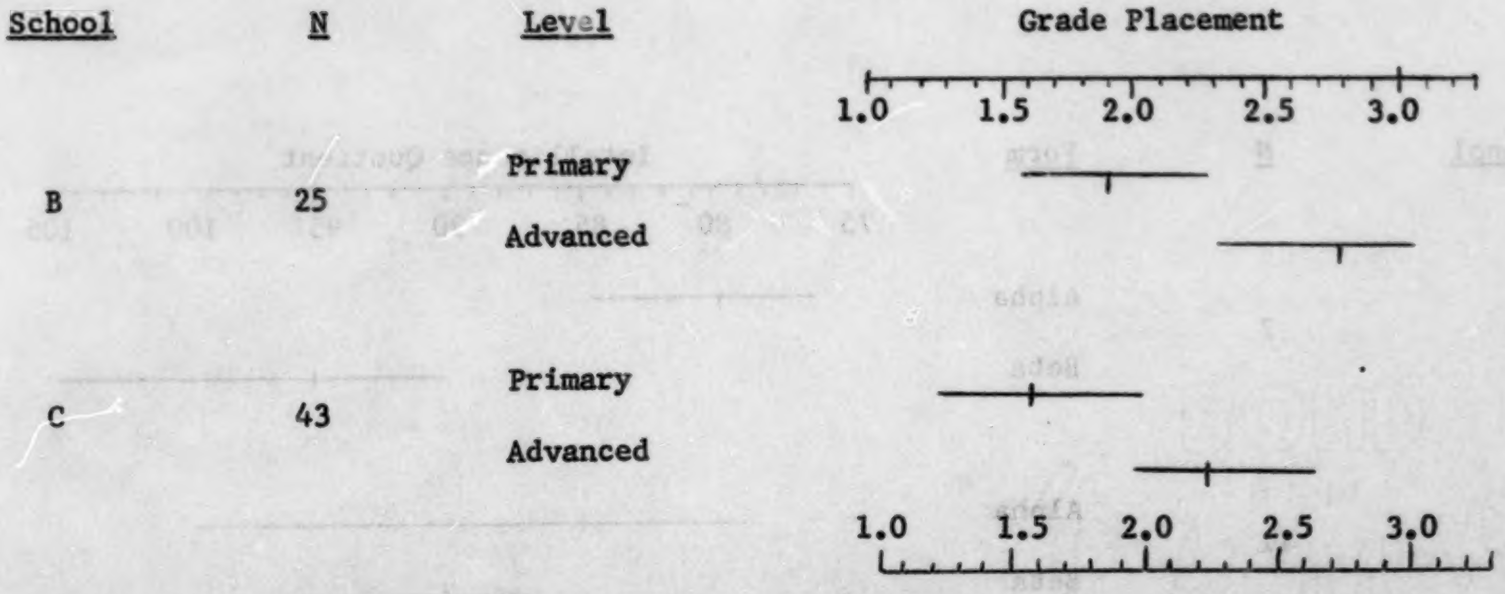

Figure 6. Median and interquartile range for grade placement scores obtained on two levels of the Gates Word Recognition Test, one administered in the first and the other in the second grade.

> Both Mr. and Mrs. F. said they hoped the children would have not only high school education but would be able to go on to college as well. They mentioned that they have told their son that there are many ways people can secure an education if they want it badly enough. Mrs. F. said they have taken him to the supermarkets with them when they shop and have pointed out boys who work there in order to secure enough money to attend school. Subsequent conversation indicated it would be Mrs. F.'s desire to have her son become a lawyer.

Into a second group were placed those children who came from homes in which a prevailing attitude was one of resignation to their station in life. Typical of the evidences which led to a classification into this category are the following:

> When Mrs. N. was asked what jobs she desired for her children and how much education she wanted them to have, she said she hadn't given this much thought. She guessed it would be necessary for the children to 'choose for themselves.' Mrs. N. felt it was futile for her to desire any one particular occupation for her children or any amount of education because as sure as she did, 'they would want to do something different.'

Finally, in the third group were placed those children in whose homes there appeared to be a definite negative attitude on the part of parents toward education and its value for their children. In one instance, for example, there was the mother who, when asked what she desired in the way of education for her children, simply replied that she wished them to go no farther than the eighth grade. She said none of the older children had gone beyond the eighth grade and she did not think the ones presently in school would want to go on. "They don't like school much." The mother indicated she had no aspirations for them beyond that point and when asked what she wanted the children to do when they grow up, there was general laughter among those present in the home during the interview. The mother replied by saying,"They are too little to know that yet."

Once these three groups had been established, changes in scores over a two-year period were noted for the Grace Arthur Point Scale and for the Otis Test of Mental Ability. The resulting medians and inter-quartile ranges for the two tests are shown in Figures 7 and 8.

In view of the small number of cases involved -- particularly for the Otis -- little can be said with respect to the change in scores over the two year period. Most striking and highly suggestive, however, is the consistent upward trend in performance from negative, through resignation, to the positive groups, the latter obtaining a median I.Q. of approximately 20 points above that of the negative group. It is interesting to note that the median I.Q. on both the Otis and the Arthur where the children came from homes with positive attitudes and aspirations was just slightly above 100.

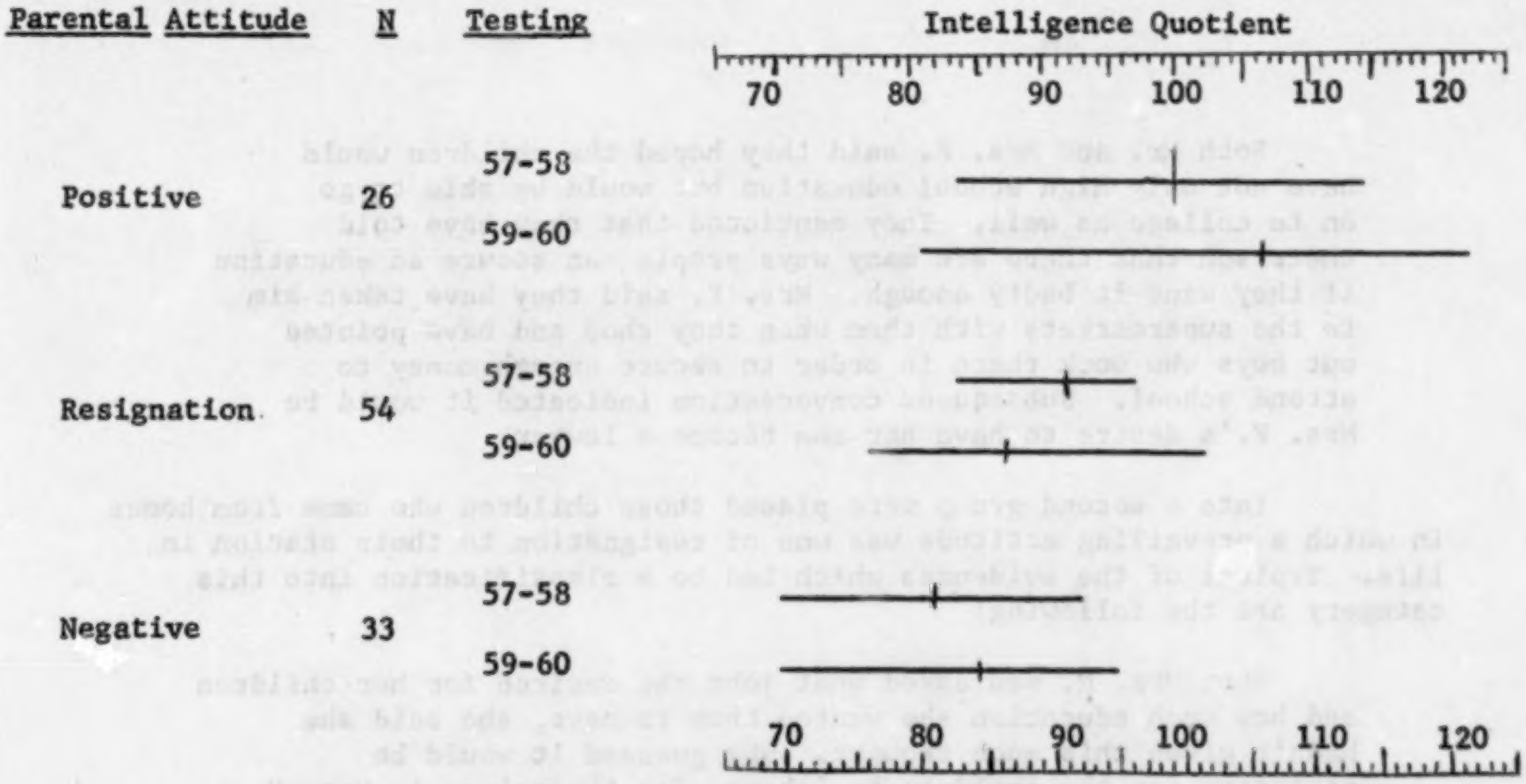

Figure 7. Median and interquartile range of I.Q.'s obtained on the Grace Arthur Point Scale by subjects grouped according to parental attitude and aspiration.

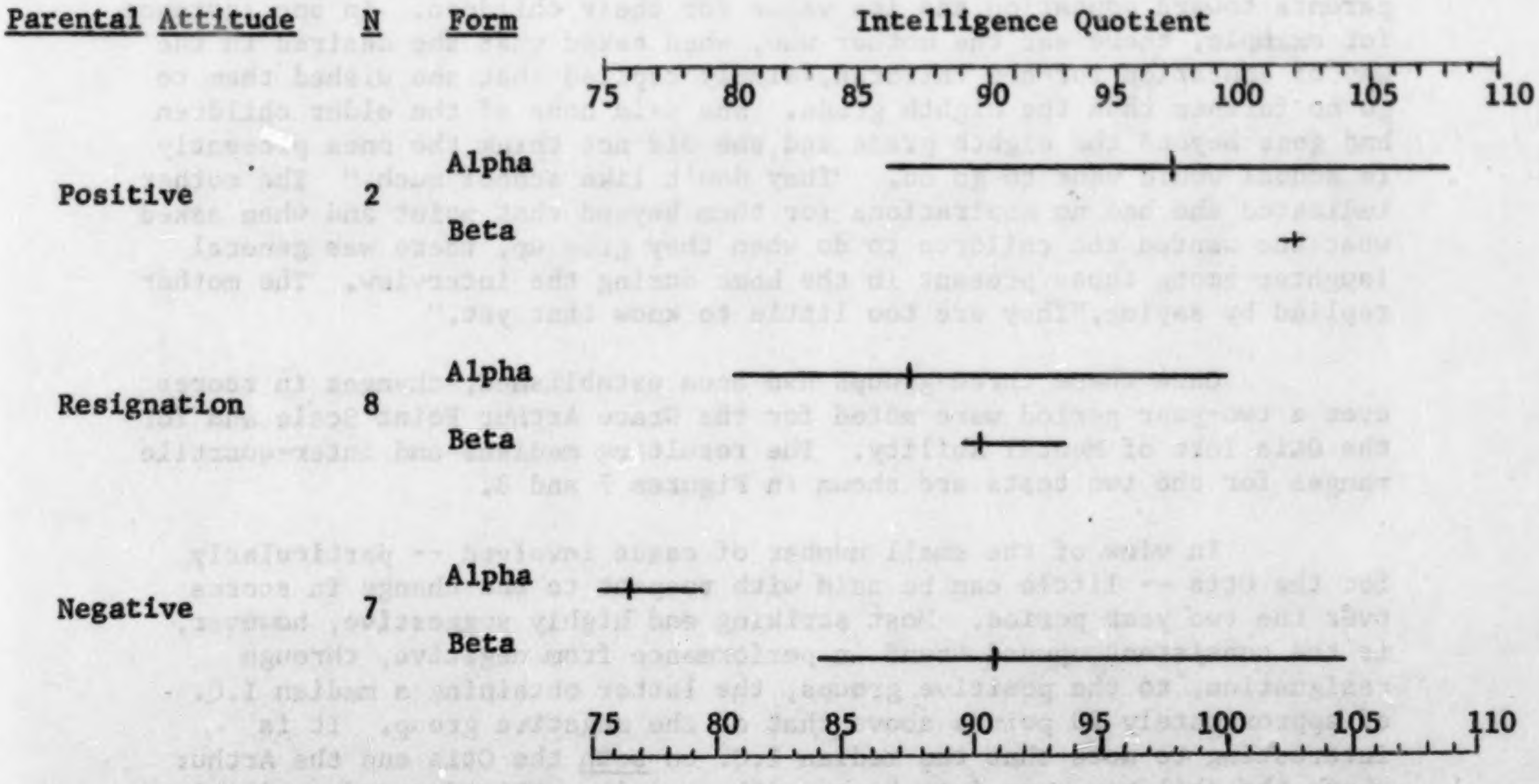

Figure 8. Median and interquartile range of I.Q.'s obtained two years apart on the Otis Test of Mental Ability by subjects grouped according to parental attitude and aspiration.

What brought about this observed relationship between performance on mental ability tests and parental attitude is difficult to say. It could be an artifact resulting from the fact that the social worker who did the sorting was familiar with the children as well as their homes; it could reflect simply that the parents were quite realistic about the abilities of the children; or it might be that the home attitude is an important cause of psuedo retardation.

From a purely practical point of view, the question of pseudo mental retardation boils down to that of whether test performances for these bilingual children are valid indicators of their future educational accomplishments. Thus, a final kind of evidence relative to the question of pseudo versus real mental retardation comes from the inter-correlations among the various tests.

TABLE 5. INTERCORRELATIONS AMONG THE DIFFERENT TYPES OF TESTS[1]

Test	1	2	3	4	5	6
1. Arthur Point Scale		.01	.21	.28	.21	-.01
2. WISC Vocabulary	120		.36	.12	.15	.21
3. Otis Alpha	85	86		.20	.05	.24
4. Gates Reading	105	105	81		.34	.22
5. Calif. Language	22	22	19	22		.57
6. Calif. Arithmetic	21	21	18	21	21	

---

[1] Correlations are presented above the diagonal and corresponding sample size below.

In Table 5, all the inter-correlations among the six different types of tests given (i.e., ability measured by individual performance, by individual verbal, and by group tests, and achievement in reading, in English and in arithmetic) are presented.

From these results, there is certainly no evidence of a relationship between performance on tests of mental ability and school accomplishment. This strongly suggests that extreme caution must be exercised in attempting to interpret ability test results on those types of children represented by the bilinguals of this study. Teachers and others who work with such children would probably do well not to rationalize a lack of accomplishment on the basis of lack of native ability as measured by the usual tests. Probably the safest conclusion would seem to be that, for these children at least, test results should not be interpreted apart from other information and data which may be gained through individual case studies of the children and their environment.

Factors Related to Apparent Retardation

Out of the many factors which could be related to retardation, seven factors which had been suggested in the literature or by the consultants as likely to be the most important variables of the situation were selected for study. In each instance, the children of the study were sorted into two or more groups representing the extent to which they or their families were characterized by the factor under consideration. Then, the medians and inter-quartile ranges of scores obtained on each of the six different types of tests used in the study were obtained for each group separately. The results of these computations are shown in Figures 9 through 15.

Socio-economic level. One of the factors which has consistently been found to be related to test performance is socio-economic level. Thus, the social worker divided the children into three groups according to their socio-economic condition relative to the other children of this study. An example of a family classified for purposes of this study as having a high socio-economic level is Family D., who obviously enjoy a higher standard of living than most of their neighbors.

> Mr. D. derives his livelihood from hauling cotton, grain and other farm products in trucks which he owns. He has three or four very large trucks which are free and clear of all debt. The house, likewise, is free of encumbrance and is one of the better homes in the neighborhood. Despite the adequacy of the D. home, the family have plans for building a larger house located near the suburbs.

Families classified in the middle socio-economic group are typified by the following case study:

> The H. family rents the home in which they live. They pay $35 a month plus their utilities. The family is comfortably situated as the house is modestly attractive and immaculately clean. However, Mr. H. wishes they could move into a larger house as at present all of the children have to sleep in one of the bedrooms and the parents in the other.
>
> Mr. H. has worked for a cotton company as a maintenance man for the past four years. He likes his job and says the men who head the company are very good to him. He earns only $1.50 an hour and works six days a week but considers this 'better than common labor.'

> Mrs. H. has also been employed from time to time. Her most recent job was with a laundry where she worked to help defray some heavy hospital bills which were incurred following the serious illness of one of the children. Mrs. H.'s earnings varied according to the number of hours she worked. She was paid from 85¢ to $1.00 an hour.

Those classified in the lowest socio-economic level were mostly typified by the families receiving public assistance or those who derive their income from seasonal farm labor.

> Mr. V. has not been employed for some time. There has been very little farm work, but Mr. V. hopes soon to be going to work in the sweet potato and onion fields. When pressed to tell how the family have managed during this period of unemployment, the mother stated the neighbors had given them food and there has been one grocery order from the Department of Public Welfare. At the present their lights have been 'cut off' and the family are out of food. She said, 'We have no groceries at all.'

From Figure 9 there would appear to be a clear-cut relationship between socio-economic level even within the group studied and performance on tests of ability. Although only a small number of cases are involved, there is an indication that children from the highest socio-economic group do better on measures of achievement in English and arithmetic than do the children from the other two socio-economic levels.

It is particularly interesting to note that there is no suggestion of a similar relationship between socio-economic level and performance in reading. Except in one other instance, where an artifact may have affected the results, this phenomenon of a smaller difference between groups for reading than for other achievement measures, occurs for every socio-cultural factor which seems to be related to test performance. A possible explanation of this consistent finding might be that children from all socio-economic levels feel the need of learning to read, while only those from the higher socio-economic groups find value in English grammar and arithmetic.

General cultural differences. A second major factor which has been suggested as having a significant influence on test performance is that of general cultural differences. For purposes of this study, it was felt that the three different communities studied provided as refined a grouping as could be obtained on this variable. Thus, in Figure 10, the various test performances are reported by school.[1]

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[1] Since the measures of achievement in English and arithmetic used in School A differed from those used in Schools B and C, results of School A on these subjects have not been included.

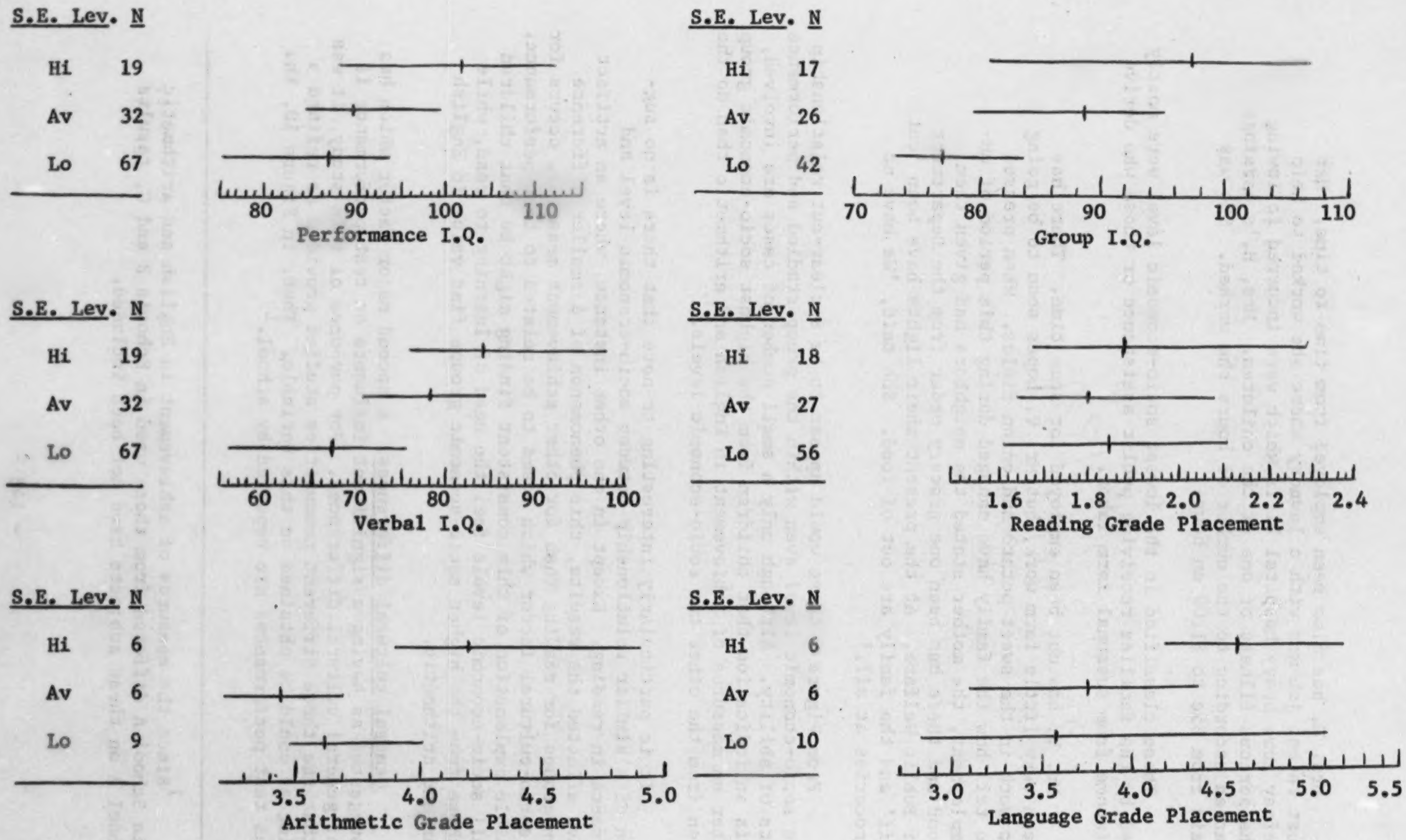

Figure 9. Median and interquartile range of performances on various types of tests obtained by children from homes of three socio-economic levels.

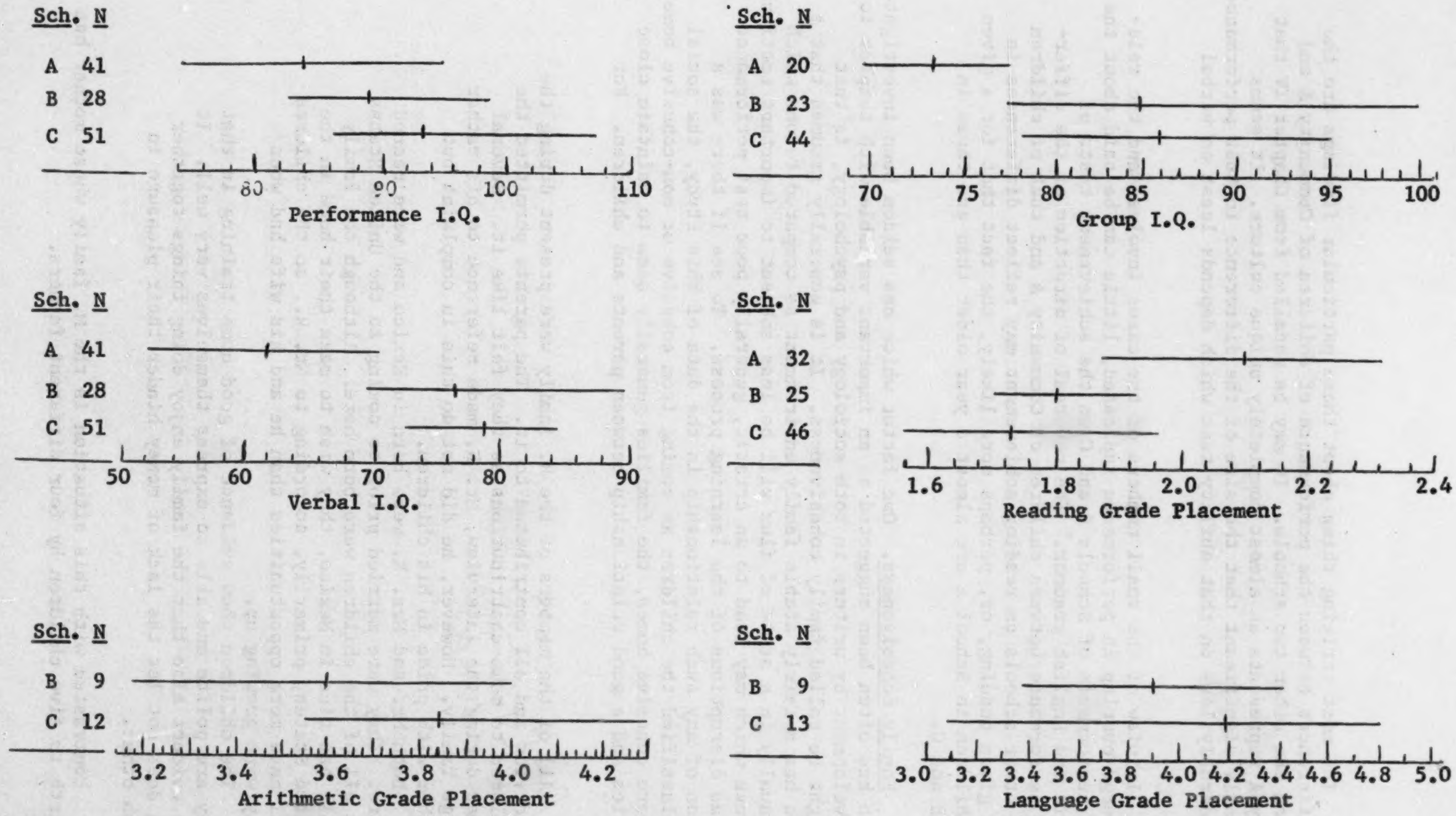

Figure 10. Median and interquartile range of performances on various types of tests obtained by children from different general cultures (schools).

The most striking thing about these particular findings are the great differences between the performance of children of Community A and those from the other two schools. It may be recalled from Chapter IV that Community A represents an almost completely unique culture. It seems particularly significant that the size of the difference in test performance is considerably less on that ability test which depends least on verbal factors.

In view of the small numbers of the cases involved and the relatively large overlap in performance indicated, little can be said about the relative performance of Schools B and C on the achievement tests of arithmetic and English grammar. The reversal of direction of the differences in performance between children of Community A and that of children from the other schools on reading achievement may reflect differences in emphasis given reading, or, perhaps more likely, the fact that for a given grade, children in School A are almost a year older than are those in Schools B and C.

Family cohesiveness. One factor which has seldom been investigated, but which has often been suggested as an important variable with respect to early development by writers in both sociology and psychology, is that which might be called family cohesiveness. It is generally assumed that a child who has a fairly stable family environment as compared to one which is continually in a state of flux will be less subject to important emotional disturbance which may lead to an erratic, generally poor test performance as well as disruptions of the learning process. To see if there was a suggestion of any such relationship in the data of this study, the social worker classified the children as coming from cohesive or non-cohesive homes. In the more cohesive homes, the families generally seem to maintain close family ties and a good relationship between parents and children. For example:

> All of the members of the R. family were present during the interview and all contributed to it. The parents permitted the children to make contributions as they felt like it. Several times during the interview, Mr. R. made reference to his rather large family. However, he did not do this in complaint but rather with pride in his children.
>
> Both Mr. and Mrs. R. were born in Mexico and were reared there. They were married prior to coming to the United States but all of the children were born here. Although the family still has ties in Mexico, they wish to make their home in the United States, primarily, according to Mr. R., so the children will have more opportunities than he and his wife had when they were growing up.
>
> The children show evidence of good home training in that they are polite and able to express themselves very well. It was evident also that the family enjoy doing things together and does not let the lack of money hinder their pleasure in each other.

Contrasted with this situation is the M. family whose mother has given birth to five children by four different fathers.

> 'My life hasn't been very good -- I've had two divorces and four men.' Mrs. M. recognizes the need of her five children for a father. 'Someday I hope I can find a husband who will help me raise my children and one who will be a father to them.'

Noting the generally small difference between medians and the large overlap of distributions apparent from inspection of Figure 11, little can be said with respect to the importance of this variable from the findings of this study. The only possible exception might be the performance on the arithmetic achievement test. Although the number of cases is small, there is very little overlap of distributions and the median differences represent slightly more than .5 of a grade placement.

Family size. Another variable which it seemed might have an important influence on test performance and school achievement is that of family size. To examine this possibility, all children with five or more siblings were placed in one group and those with four or fewer siblings were classified as coming from small families. As was done with the other factors, the median and inter-quartile ranges were computed separately for the two groups. As can be seen from Figure 12, differences between medians are small and/or the overlap of the distributions large in almost every case.

The most notable exception to this finding was the performance of the English achievement test, where, although the numbers are small, there is a strong suggestion of a real difference. Interestingly, as might be predicted, the children who have many brothers and sisters do better in English grammar and spelling.

Fathers' education. One factor which has quite frequently been related to test performance is that of fathers' education. Thus, the children of this study were divided into two groups -- those whose fathers had completed six or more years of schooling and those whose fathers had completed five or fewer years of schooling. The means and inter-quartile range of performance on the various tests obtained by children from these two groups are shown in Figure 13. A fairly clear and consistent pattern of relationships is suggested between ability measures and education of fathers. Children whose fathers have had the most education not only seemed to attain higher I.Q.'s, but the advantage appears to increase slightly with the increase in importance of verbal material of the test. A most interesting finding is the apparent lack of a similar pattern of relationship as far as actual school achievement is concerned. With these measures, the median differences, the degree of overlap of the distribution, or the sample sizes were not of such a magnitude as to suggest anything other than chance fluctuations.

Participation in community affairs. The next factor to be considered in relationship to test performance was that of participation in community affairs. To examine this possibility, the social worker sorted the children into three groups according to whether they and their families participated actively in community affairs, participated occasionally, or never became involved in such situations.

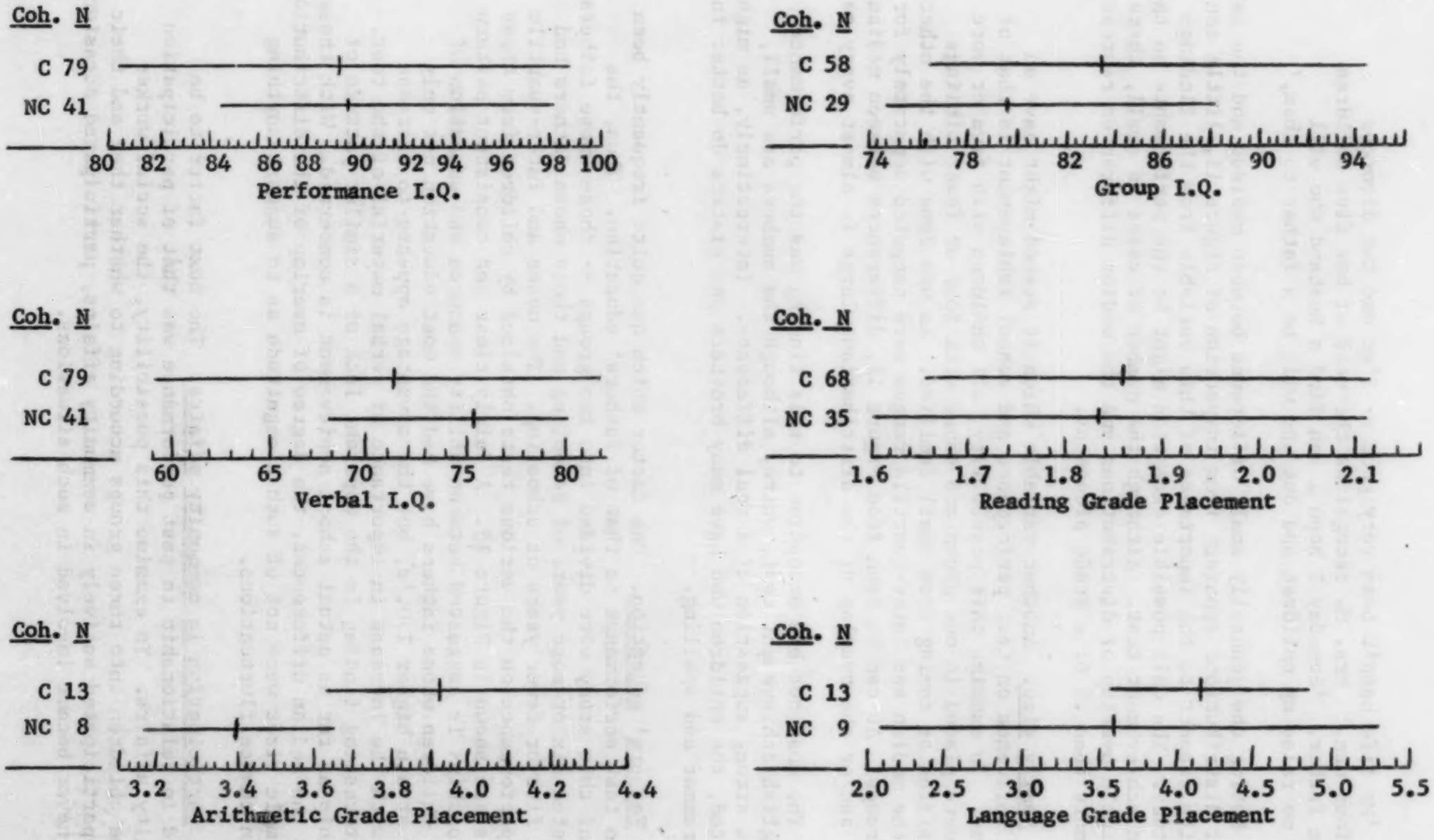

Figure 11. Median and interquartile range of performances on various types of tests obtained by children from homes of two different degrees of family cohesiveness.

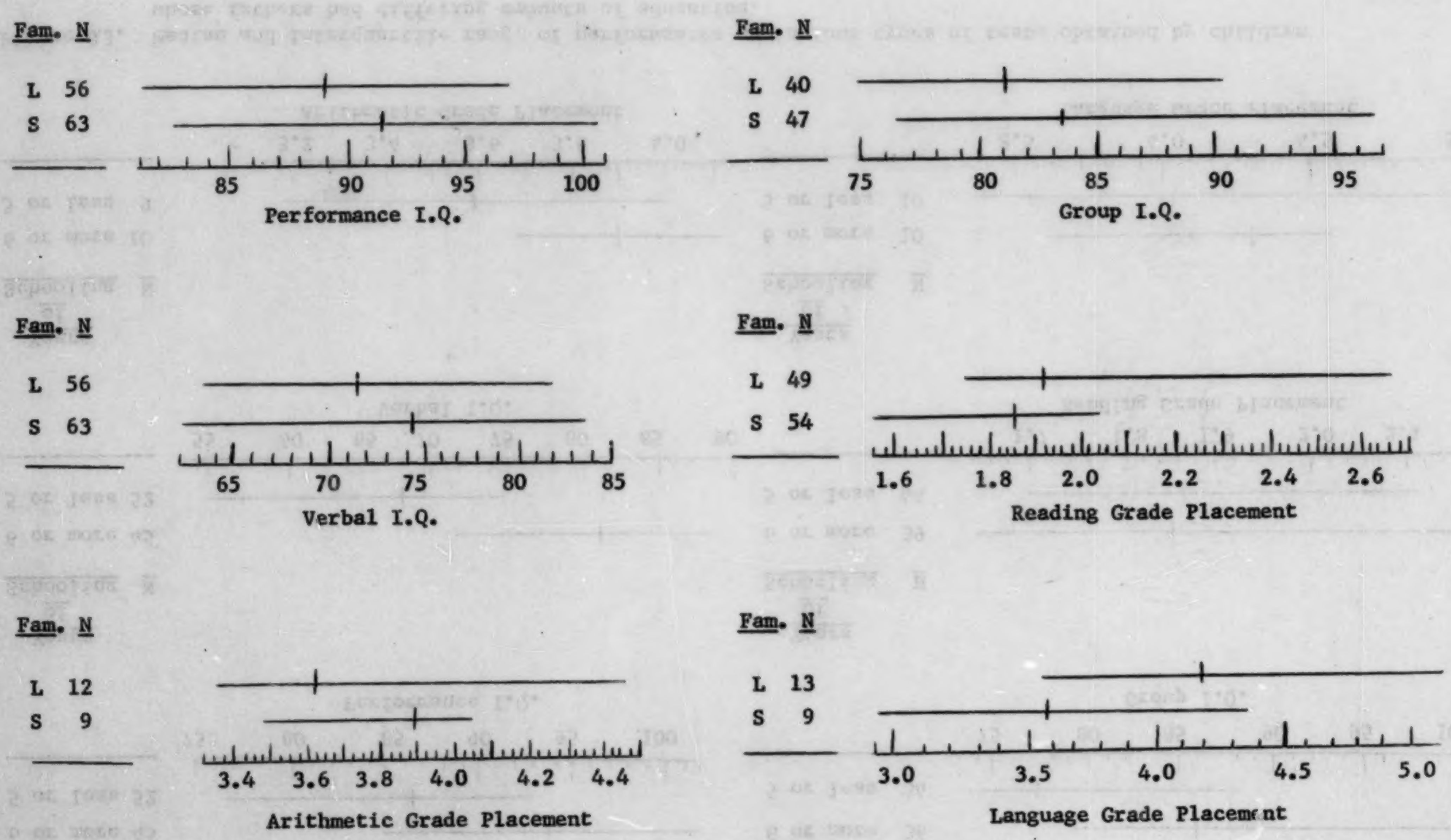

Figure 12. Median and interquartile range of performances on various types of tests obtained from children from large and from small families.

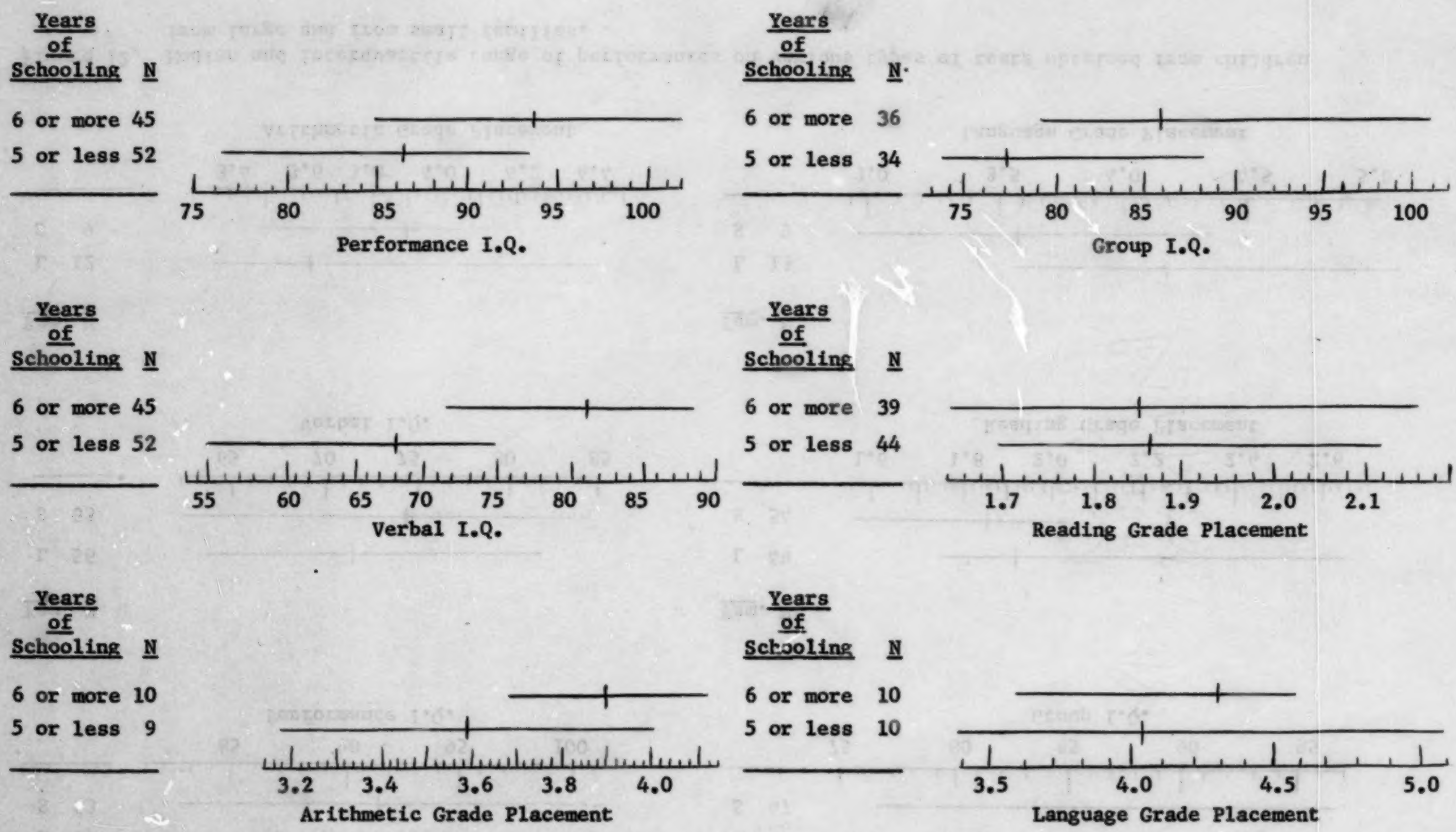

Figure 13. Median and interquartile range of performances on various types of tests obtained by children whose fathers had differing amounts of education.

> The G. family was one which seemed particularly active in all phases of community life. Mrs. G. particularly was active in PTA. She served as a district committee woman for the Campfire Girls and was a member of a Catholic Women's organization at her church. In addition to this, she also was active in neighborhood political affairs.

Then, there were those, such as the B. family, who participated occasionally in community affairs.

> The only organization either of the parents belonged to is the parents' club at C School. Occasionally Mrs. B. attends this even though she does not always understand what is going on. Mr. B. does not belong to any clubs or organizations. He said the reason for this is he does not have time for such.

Finally, there were those in the study who never became involved in community affairs, for example, the P. family.

> The P. family does not belong to any clubs or organizations. The parents have never gone to any of the PTA meetings at the school. Mrs. P. said she would like to but has to look after the children. Mr. P. says he won't participate in outside activities because he has to go to bed early. The family does attend church but has not affiliated itself with any auxiliary organizations.

The medians and inter-quartile ranges computed separately for each of these groups on performances of the six typical tests are presented in Figure 14.

All ability performances strongly suggest a relationship between I.Q.'s of these children and the extent to which they and their families participate in community affairs. It is interesting to note that in the case of the Otis Alpha and the WISC verbal estimate of the I.Q., it is the non-participating group which appears to be pulled away from the other two, while with the performance I.Q., the high participation group seems to have had a marked advantage over the others.

Although the very small numbers involved and the rather large overlap of distribution forewarns against any definite statement, the consistently curvilinear relationship shown between the median achievement scores and the degree of participation in community affairs is striking.

Degree of bilingualism. Finally, a factor of special importance, at least as far as this study is concerned, is that of the degree of bilingualism -- the extent to which a child comes from a home where two languages are spoken.

To note the relationship between degree of bilingualism and test performance, the social worker first classified each subject into one of

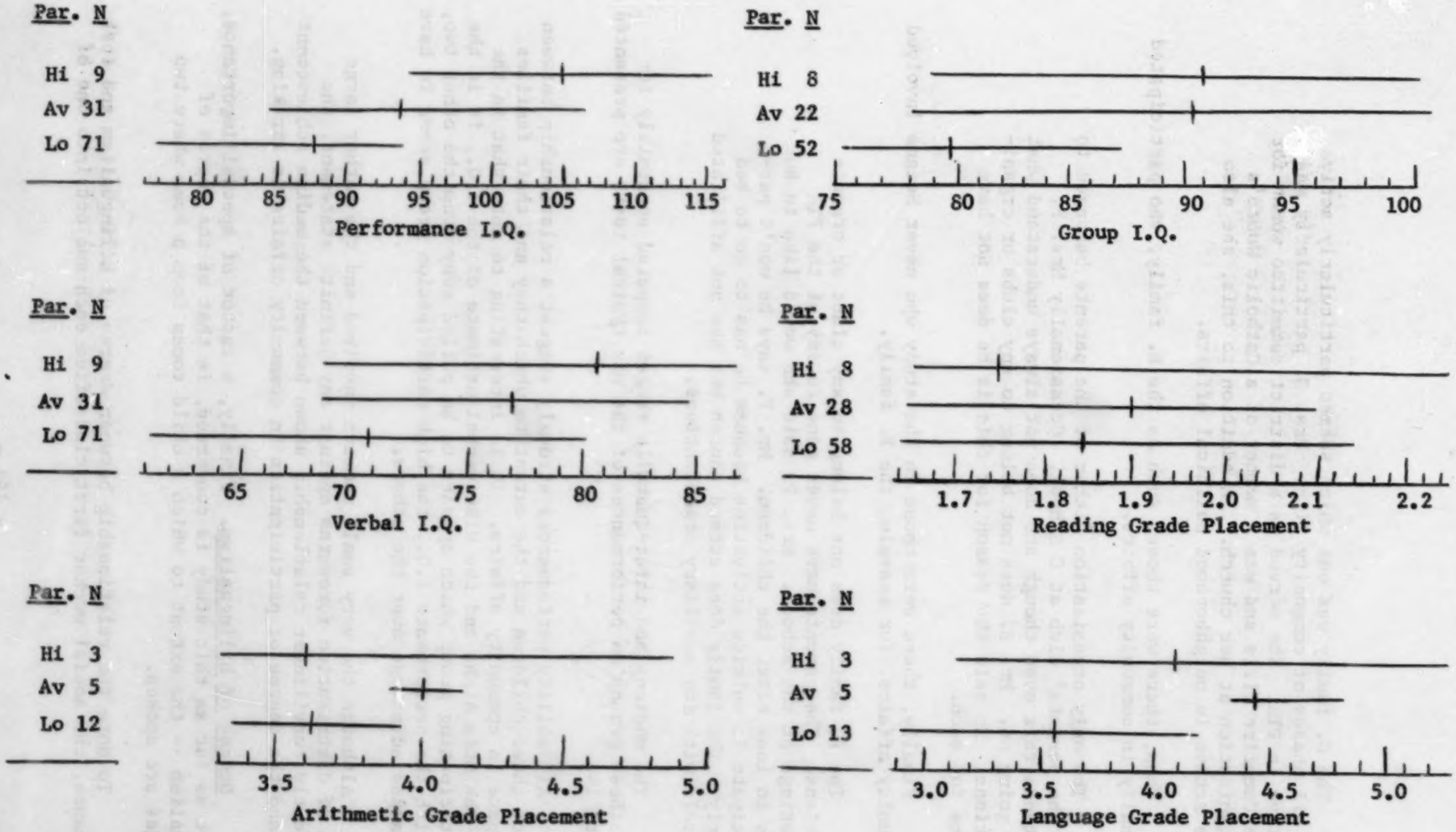

Figure 14. Median and interquartile range of performances on various types of tests obtained by children grouped according to the degree of participation of their families in community affairs.

the following categories: definitely bilingual, (Bi); average facility with two languages, (Av); below average facility, (-Av); and definitely unilingual, (Uni). Typical examples of each of these categories are the following:

Bilingual:

According to Mrs. R., both she and her husband speak an equal amount of English and Spanish. It was noticeable during the interview that she spoke almost without accent.

Mrs. R. is employed at the county hospital. She stated that there are a number of Mexican internes there. Often they will address her in Spanish and she will answer them in English. According to Mrs. R., this surprises them but she explains it by telling them that here in the U.S. it is necessary to speak English if 'one gets along.' In their home, the R.'s use the languages interchangeably. For example, they might be speaking in Spanish and then suddenly will start using English or vice versa. Mrs. R.'s mother also speaks English very well and all of the adults, including the parents and Mrs. R.'s mother, read and write in both languages.

Average:

During the interview, Mrs. S. told me Spanish is spoken mostly in their home but the children speak to each other often in English with the older children helping the younger ones speak it. Mr. S. speaks English more fluently and more often than Mrs. S. as he needs it in his work. However, the mother can converse without difficulty in English. When Mrs. S. was asked whether or not Spanish was most often spoken in the home, she replied, 'Of course.'

Below average:

Spanish is spoken almost exclusively in the B. home although some of the older children do speak English occasionally. Because it is impossible for Mrs. B. to speak English, the conversation between parents and children is always in Spanish. Neither parent reads nor writes in Spanish however. There appeared to be no books, newspapers, nor literature of any kind in this home. The father did say they watched TV and listened to the radio in Spanish when programs were available.

Definitely unilingual:

Neither Mr. nor Mrs. R. speak anything but Spanish. Both Mr. and Mrs. R. read and write in Spanish. They mentioned they enjoy Spanish novels and receive letters written in Spanish from relatives in Mexico. While both parents have a desire to learn to read and write English, and Mr. R. is trying to teach himself, he comes home so tired at night that he finds it impossible to study. The children are learning English gradually as they attend school.

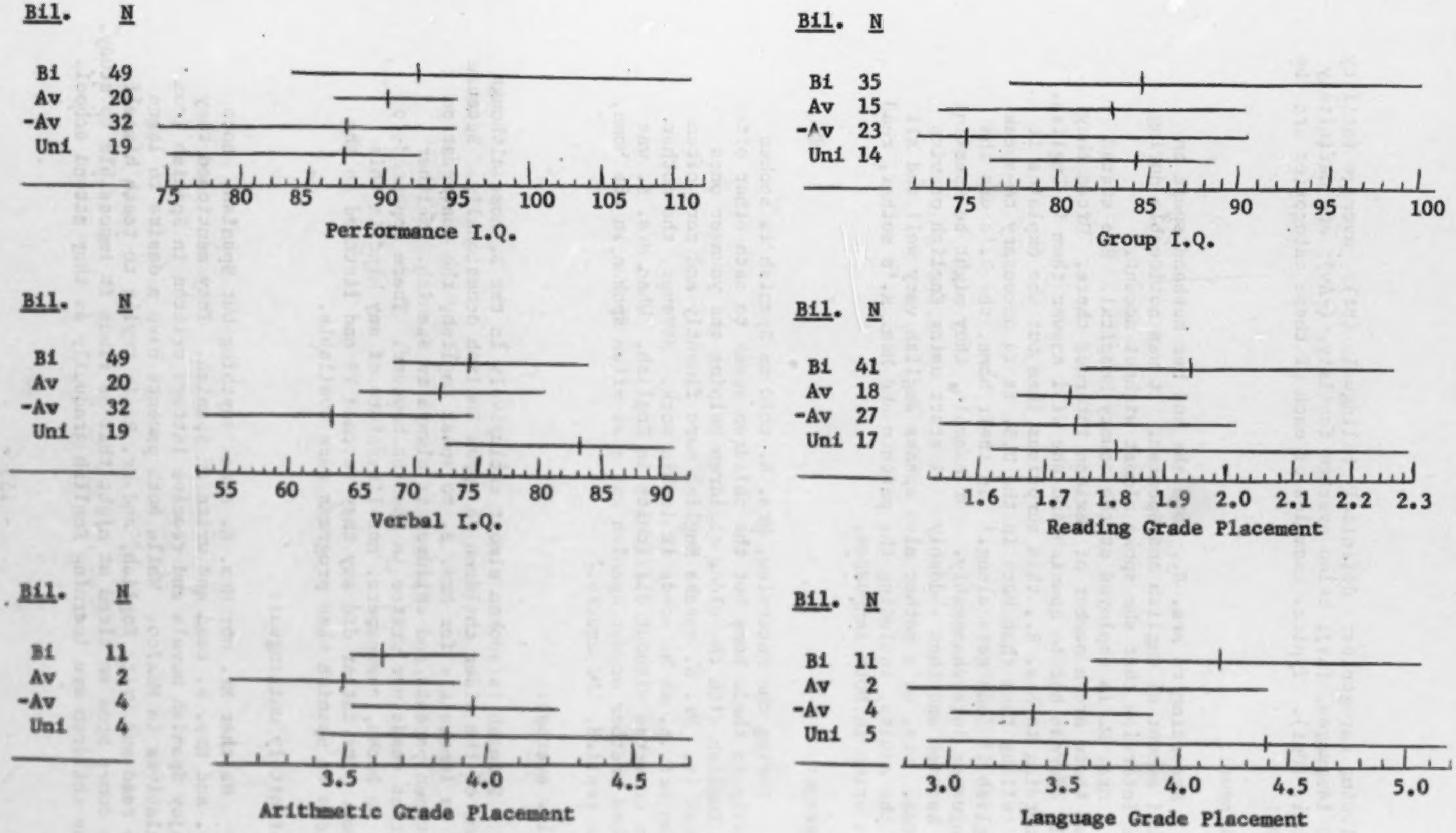

Figure 15. Median and interquartile range of performances on various types of tests obtained by children grouped according to their facility with two languages (degree of bilingualism).

Then, as with the other factors, medians and inter-quartile ranges for each group separately on each of the six tests were computed. These results are reported in Figure 15.

In spite of generally large overlaps and very small samples in some instances, a consistently curvilinear pattern of medians is apparent. Even allowing for the possibility of fluctuations in those cases where very small samples have been used, there remains a strong suggestion that the definitely bilingual and the definitely unilingual perform better than those children from the two middle groups. It is, perhaps, significant to note that the two tests for which the general pattern fits least well, the Arthur Performance and the arithmetic grade placement, are the two measures least likely to have large verbal components.

Although surprising at first, the observed curvilinearity could be the result of varying combinations of ability and amounts of exposure to the second language. Thus, those children who are definitely bilingual are the ones who have ability and have had considerable exposure to the language. Children of average or below might be those who have had exposure to a second language but do not have as much ability to learn it, while those who are practically unilingual are those with little ability or else those who have high ability but, prior to their school experience, have had little opportunity to learn the second language.

Summary

In this chapter the children of the study were described as a group in terms of various test performances and family characteristics. Rather than attempt to test hypotheses or draw specific conclusions, the data were presented to suggest general trends and point out areas where further study of a more experimental nature might be most profitable.

The children, as a whole, come from economically deprived families where the father has had little formal education and there are many mouths to feed. By and large, these children are older in a given grade than are children from other groups, and they perform less well on tests of all sorts. The median performances on most tests of mental ability were about one standard deviation below average of Anglo groups. On achievement tests the apparent retardation varied from one subject area to another, showing a progressive retardation in reading with advancing grade, but no clear trend in arithmetic or English language.

Several types of evidences described were suggestive with respect to the question of whether the observed retardation was pseudo or real. First, there seemed to be a distinct relationship between the amount of retardation and the extent to which the test used required knowledge of the English language. Second, there was little relationship between the ability measures and school achievement as measured by standardized tests.

Finally, while there was no clear trend of change in score over the three year period, a definite relationship was suggested between test performance and parental aspiration as judged by the social worker.

Performance on each of the six types of tests given (a group I.Q., a performance I.Q., an individual verbal I.Q., an arithmetic achievement, a reading achievement, and an English language achievement) was related to a number of socio-cultural conditions. The findings strongly suggested that

1. except for reading achievement, there is a tendency for test performance to be associated with socio-economic level.
2. general cultural differences are reflected most in performance on those tests largely dependent on verbal factors.
3. fathers' education is related to performance on ability but not on achievement tests.
4. the degree to which the family participates in community affairs is related to performance on tests of ability.
5. children who come from definitely bilingual or practically unilingual homes do better on tests than do children from homes of average facility with two languages.

CHAPTER VI

THE CHILDREN AS INDIVIDUALS

The information which evolves from the statistical and tabular aspects of research is significant in telling the story of any study. However, it is sometimes only a skeletal phase, lacking the richness which references to specific persons and places can occasionally offer.

In the pages that follow in this chapter an effort has been made to bring to the reader or student of this educational and social problem some portraits of children involved in this study. The case studies presented are essentially composites, and do not necessarily represent specific persons. However, every situation, bit of description, and home and community setting are real, coming directly and without alteration from the children studied as a group.

No real names have been used, of course, but one should not assume that any other basic details have been altered.

These six case studies do not represent all the children. To do so would require a detailed presentation for each of the 188 children, because they differ from each other as any group of children would, in their interests, abilities, ambitions, and home backgrounds. There are obvious limitations in what six children can tell about almost 200, and yet these brief, specific case studies can reveal, as perhaps exact statistics cannot, what these children and their homes are like, and what problems they face now and in the future. Not all the problems are stated in this chapter, but those presented indicate the possible dimensions if all the stories of all the children were told.

CONSUELA MORENO

A house consisting of two small rooms and made of scrap lumber, with no electricity, no water, no toilet facilities, no heating, no cooling, with large cracks in the walls through which summer heat, winter cold, rain, and dust blow freely--this is where Consuela Moreno lives with her family of two adults and seven children. Inside the house are a bed, an old dining room table, boxes used as cupboards, a small gas plate, an old refrigerator now used for storage of leftover foods, and a kerosence lamp. Behind the house is another small structure, a flimsy shelter made of scrap wood and old sheets, bedspreads, and canvas, where four additional beds are located. Also nearby are two outhouses shared by neighbors and patrons of the bar located in front of the house. The one water tap in the yard is also shared with many others.

The broader setting includes the bar, an automobile repair shop, and some industrial property. It also includes the only play space for children--some vacant land covered with bits of glass, tin cans, other small trash, and deep ruts filled with fine pulverized dirt that becomes mud in rainy weather. There are no trees, flowers, grass, toys, or play equipment. Traffic is very heavy on both nearby streets.

From this home and neighborhood Consuela goes to school, and she seldom misses a day. Even on cold, winter days she wears a sleeveless pinafore pinned together in the back where buttons belong, and without socks and underwear. Her clothing is invariably of poor quality and ill-fitting. She is usually dirty, and is undoubtedly the most poorly dressed child in her classroom.

But there are striking contrasts between her environment and superficial outward appearance--and the person she probably really is. Let us look at her more closely.

Consuela is almost plump, has even, attractive features, and most of the time has a placid, pleasant expression. Beneath the surface is enjoyment of beauty, rhythm and animation. One day she went with her class to see Christmas decorations in a large shopping center. At one point they all stopped to watch an exhibition of "The Dancing Waters," where the water was controlled and made to conform to the rhythm of music. Consuela was fascinated, and as the music continued, she kept time with it and imitated the movements of the changing moods and rhythms of the water. She was completely oblivious to everything and everybody around her, although her own absorption and enjoyment were so keen that they drew the attention of many adults and children near her.

Her agility, gracefulness, and quick reactions are among many of Consuela's affirmative attributes. She writes and draws with ease, has only a slight accent, has progressed steadily in school, and seems secure in her relationships with other children. In some play activities at school she shows a leadership quality. At the end of second grade her reading test grade level was 3.2.

Consuela scored slightly below average on her two individual intelligence tests, 86 on the WISC and 81 on the Arthur Point Scale. In connection with the latter test the psychometrist noted, "The spread of scores might indicate that this IQ is an underestimate of her ability."

Here may be a true case of pseudo mental retardation, or at least pseudo slow learning, of a child from one of the poorest home environments in the entire study.

Consuela is the oldest of the seven children. Her step-father is her mother's common law husband, and is the real father of her four younger sisters. The father of Consuela and the other two children deserted the family in Idaho in 1953, and has not been heard from since.

Mrs. Guerra and her first husband followed the crops as her parents had done before them since coming to the United States from Mexico, in 1937. She and Mr. Guerra, her present husband, continued to do so for a while, until they came to their present location in 1955, where all four younger children of this union have been born. Mr. Guerra picks cotton, and his earnings are irregular, depending on crop conditions.

Their house rental is $10.00 a month. Although Mrs. Guerra recognizes the inadequacies of their present housing, she anticipates no change in the future. She stated that sometimes it is so cold that the family spends the entire day in bed. There is an ordinance against building a fire outside, but once in a while the family does anyway, in the early winter mornings. Other times it is so hot that it is impossible to stay inside, so they go outdoors and follow the shade from the house as the day progresses, sleeping outside at night.

Mrs. Guerra's parents live in Texas where they have lived for many years. Her father who recently visited her hadn't seen her for eight years. He was very upset with the way she and her family lived, saying, "This isn't even good enough for chickens." Mrs. Guerra once nostalgically commented that the old days in a labor camp in Idaho were much better, for then each family was furnished with a wood-burning stove.

They did receive an application form for a housing project, but she felt it probably had been lost. They never bought any furniture because it would be impossible to keep up the payments. Charity provided the few possessions they now have.

The limited, uneven earnings are doled out to Mrs. Guerra on a daily basis for food purchases, and no food is bought in advance. Their diet consists largely of meat and beans, and there are no vegetables (because Mr. Guerra doesn't like them) and no chicken (because of the inadequate cooking facilities). Mrs. Guerra would like to have more responsibility for handling money, and feels that her husband's control of it is one reason why they have such poor housing. He spends money on sweets and other non-essentials, she said, and when he takes the children into the cotton fields he buys them hamburgers and pop.

The family has no fun together as a group. They have no money, no transportation, belong to no clubs or organizations. Even a radio they once had no longer belongs to them, and without electricity a television set would do no good. Consuela's mother wistfully mentioned that she would like to take her family to the country sometimes, but had no means of getting there.

Parental hopes for their children are beyond expectations. High school and secretarial jobs are among the hopes, but they are tempered by the realization that "free education" is not really free, that books cost money, and that possible later incomes from the older children would have to be sacrificed if they were to continue beyond elementary school. Mrs. Guerra is far from certain that they will even complete eight grades.

Consuela has already helped indirectly with the family earnings. She has gone with her father to the cotton fields and carried water, thus saving him the time he would lose if she were not there.

Consuela's early development was normal--full-term baby, nursed until about a year old, walking at 15 months. Her early childhood has been comparatively healthy. Her medical records show no innoculations of any kind until she was seven years old.

Evaluations by her teachers indicate parts of her personality not revealed from other sources. Occasional disruptiveness and aggressiveness in class are attributed to her desire to be noticed, to participate, to be active even when she may not be capable of performing adequately. She draws attention to how helpful she is to others, showing an eagerness to be praised. Her enjoyment of school was commented upon, and so was her intelligence as being average or even slightly above average.

It is interesting to note that in all of the home visits made by the social worker, Consuela's step-father was never present even though appointments were made on the basis of his free time after work. One teacher referred to his drinking, although his wife never did.

Spanish is the dominant language in the home, the one which is most frequently spoken to the children. However, Mrs. Guerra says she is making more of an effort to speak English to the younger ones because she would like them to learn it before they go to school. She had about six years of schooling but only completed third grade. Her present husband told her he had finished eighth grade, but he does not speak English very well, she said.

She feels the school is doing a good job with her children, three of whom are now in school. The second child, a girl, seems to be having difficulty in first grade because she cannot understand the material given to her; all of their scolding apparently does no good, they feel.

The family's cultural ties, holidays, and food are closely aligned with Mexico. However, there are no indications in the home through decorative or printed materials that activities are dominated in any way from either a cultural or educational direction. The activities and products of learning are completely absent.

Both parents like this area, according to the mother, but dislike their neighborhood. She expressed her fear of colored people, and especially of the ones who frequent the bar near their house and use their toilet facilities. She doesn't like what they say, and doesn't want them near her children. However, at present there are no plans to move.

So Consuela Moreno will no doubt stay where she is, be cold in the winter, hot in the summer, and subjected to all the limitations of a barren home and neighborhood environment. Even with these she appears to be on the intellectual fringe of the average. With an environment that would stimulate, that would open doors of cultural breadth and growth possibilities, her intellectual borders might be able to expand outward. But currently there is no hope, not even a flicker of one, that the future will provide opportunities any more plentifully than have the past or the present.

MARIA CANDELARIA

Maria, a bilingual child who, according to psychological tests and teachers' and social workers' observations at the school where she attends, is a child of at least "average" intelligence. She comes from a family economically deprived, from a sub-cultural group--factors which presumably would tend to limit her learning capacities automatically. Superimposed upon these "usual" factors in the situation of this bilingual child are other conditions which may have further bearing on her learning capacity, and which would have their effect upon the performance of any child in almost any culture. These factors have to do with her emotional life--the home situation.

Her parents have been divorced for the last several years. The divorce followed considerable difficulty between them. The mother accused the father of drinking excessively and the father in turn accused the mother of being unfaithful to him. At the termination of the marriage, the father left the area and went to California. His present whereabouts are unknown. The mother made her home with her parents for a time, then sought employment in a nearby city, leaving Maria with the grandparents and taking the two older children with her. The mother subsequently left the city and found employment in a factory in California. Maria is still living with her maternal grandparents and is separated from the rest of her immediate family.

In addition to the foregoing proglems of this family, another factor which has undoubtedly had its bearing upon this child has been a health problem. Maria's mother had an active case of tuberculosis and was actually in a hospital for almost a year after the child's birth. The maternal grandfather also has active tuberculosis and is in and out of the County Tuberculosis Hospital frequently.

Coupled with this health problem is a severe economic situation. The grandparents receive aid from the Department of Public Welfare as did Maria's mother prior to her securing employment.

Description of the child. Maria is a pretty little girl with light brown skin, evenly formed teeth, and soft long hair which is braided in pigtails. She has slightly oriental features as her eyes are almost almond shaped and slightly turned up at the corners. The child appears to be healthy except for frequent colds and has been given the usual immunizations and tests including a skin test for tuberculosis which proved to be negative.

Maria's general appearance is usually good. She comes to school neatly dressed and clean. The quality of her clothing, while not the best, is still better than that of most of her classmates.

According to the mother, Maria was a full-term baby but was "too large" at birth, which was responsible for a difficult delivery. She weighed 10 pounds, 3 ounces. Maria was a bottle-fed baby from the very beginning. She began walking at about one year and talking at about the same time. As far as the mother has been able to remember, the child had no major illnesses. However, she did have a serious accident. Maria was burned when her dress caught fire as she and some other children warmed themselves by a fire in the back yard. She was hospitalized and for nearly two weeks, she refused to eat. She was badly scarred from this burn but the scarring occurred mostly on parts of her body normally covered by her clothing.

All three of Maria's teachers describe her as a child who enters freely and helpfully into group activities, recognizes opportunities to assume responsibility and carries through to the best of her ability in things she can do. At the same time, she is one who needs reminding, compulsion, or much prodding in assignments she doesn't particularly like. All of her teachers describe her as showing leadership but one who will also accept decisions of the group. She is a considerate youngster and is responsive to almost everyone. One teacher described her as one who takes things more or less as they come but seems to lack self-confidence and cannot be depended upon to carry out definite plans. All teachers felt Maria is not over-emotional, but is a spontaneous person. In the classroom, she is described as being neither disruptive nor very compliant.

Maria has a noticeable accent and has some difficulty in English pronunciations, but is more than normally talkative and conversant. She appears to have a personal desire to learn and use English well and up to this point has had very little difficulty in expressing herself in English, even with her limited vocabulary. In the classroom and on the playground when speaking to her peers, Maria uses English and Spanish interchangeably.

Psychological evaluation. Maria was given the Arthur Point Scale Performance Test, the first in the study series, at a chronological age of 7 years, 4 months. In commenting on her performance during the test, the examiner stated, "Maria attacks a problem quickly and works hard for a short time, but gives up if she is not successful right away." There appeared to be impulsiveness throughout the test and at times the psychometrist felt the child was not working to capacity. Her attention was fair. She indicated very little "pre-planning" and at times would work hard for a short period and then give up. Because of these factors, the examiner commented, "Maria's impulsiveness, low motivation, and variable performance makes this I.Q. a gross underestimate of her native ability." Maria scored an I.Q. of 102 which, in comparison with scores earned by most other children tested at this school, was high.

The second of the psychological evaluations given by the study (the WISC), was administered when Maria was 8 years, 29 days old. The psychometrist's comments on her performance were as follows: "Quick responses; quick to admit when she didn't know. Slightly uncritical of work unless encouraged." On this test, Maria scored an I.Q. of 97 This also was a comparatively high score for her school.

Statement of present school situation. Maria will be 9 years old in less than a month. She is one year behind the group of children she started with in first grade (she was retained in first grade), and would be approximately two years retarded in comparison with most children her age in other schools. Her present grade placement is second grade. According to her teachers, Maria's work in school does not measure up to her capabilities. Beginning in the "pre-first grade" her first teacher stated, "She is one of the most attractive and responsive children but scholastically she is below where she should be." According to her two first-grade teachers, Maria does not work to capacity in school. One of the teachers made the following comment: "Because of Maria's general behavior, I would say she has more ability than any of her scholastic efforts show." Even though she is cooperative and a helpful child and one who seems well accepted by her classmates, she still is slow academically. Her retention in grade one did not seem to help her much as her next teacher felt she received very little benefit from "repeating." Both first-grade teachers commented on the fact that Maria's home situation has had its effect upon her. One teacher stated, "Perhaps if her parents were not separated she would have no sense of insecurity and could achieve better scholastically." The other teacher, in commenting on home conditions, stated simply, "Maria misses her mother very much."

Home and community. Maria lives with her maternal grandparents in a community situated almost in the heart of an agricultural area near an urban center. It is on farm labor that most of the men living here depend for employment.

The town itself is on a slight rise and because of this, has no irrigated land but rather is dry and barren. It is partly hidden by a frame of tamarisk trees which grow along the edge of a canal skirting the settlement. The canal does not serve the town but separates it from the fertile area surrounding it.

The village is largely residential with only a few business establishments along its main street. There are no public recreational facilities and because of this, the children largely have to improvise in their play. One favorite pastime is swimming in the canal.

There are no public transportation facilities and no social agencies within the community itself, nor are there many clubs or organizations serving the community.

The homes are for the most part extremely modest. Some of them are constructed of scrap materials or adobe made by the owners themselves. Nearly all the homes have no water inside, with only a tap located in the yard. They are heated by wood-burning stoves and, with few exceptions, have toilet facilities outside. Much of the land on which the homes are situated is not individually owned but is part of either "mission land" or state land on which the people are permitted to build their homes. Maria's grandparents are included in the first situation.

The grandparents have lived in their present home for 30 years and own the house but not the land. It is a single family dwelling; its condition is fair. They cook with gas, have electricity, and are among the few in the village having both hot and cold water in the house. There is no bathroom but toilet facilities are located in the yard.

Both exterior and interior walls have been stuccoed over adobe. The inside has been whitewashed, giving it a clean, fresh look.

The four rooms in the home are quite small and are somewhat crowded with beds, dressing tables, and in one corner a religious altar. On the walls are pictures of family members intermingled with religious pictures.

The kitchen has been furnished recently with a "new" (second hand) stove and refrigerator. The only plumbing in the house is at the sink where there is both hot and cold water. This improvement has been made recently; therefore the water pipes are exposed along the kitchen wall. The grandmother, nevertheless, is proud of it.

The general appearance of the home is neat and although things are cramped and crowded, the housekeeping standards appear to be good.

Family background. Both of Maria's parents were born in Arizona. Little is known about the father's background and that of his parents, but it is presumed that he lived in this immediate area inasmuch as Maria's mother said one of the reasons for the failure of her marriage was that her husband's family did not like her.

Mrs. Candelaria and her parents have lived in the community for more than 30 years. Both her father and mother were born in Sonora, Mexico, but came to the United States when the grandfather was about 25 years of age. His purpose in coming to this area was to work in the mines. However, he stayed there only about three years, as he developed silicosis and was forced to stop mining and move to his present location. Most of the children in their family were educated in the village school.

The grandfather did farm labor when he first came to this area. Later on he worked as a foreman on a large ranch nearby until he became ill again and was forced to accept assistance from the Department of Public Welfare.

Maria's mother implied that Mr. Candelaria, her ex-husband, never provided for his family adequately. His work was spasmodic and, because of this, he never had a home for his family. According to Mrs. Candelaria, he drank heavily and twice wrecked automobiles, each of which cost about $900. In spite of this, there were many things about the father which the mother admired. "He often helped me when I was not well and did such things as washing and ironing and doing the dishes."

Since the divorce, Mrs. Candelaria has secured employment. She first was sent to a school provided by the Tuberculosis Association to learn to become a cashier, but stopped this before finishing the course and found a job as a cook in a school cafeteria. This did not pay sufficiently well to take care of the needs of her family; she now works as a factory seamstress in California. The grandmother speaks very proudly of the fact that her daughter now earns $80 a week in contrast to the $130 a month which she formerly earned.

Cultural background. All members of Maria's family speak Spanish as their basic language. Her grandparents speak nothing else, but her mother and siblings do speak English at times. Maria herself intermixes Spanish and English when addressing her peers at school.

The roots of this family seem to be in this community even though the mother is away at present. The grandparents like their neighbors and feel they would not wish to live elsewhere. They realize there are certain things which could be better about the community. However, they are accustomed to conditions -- even the poor water is not a serious objection. As they indicated, they are "used to it."

There seems to be family cohesiveness, in the grandparents' family at least, with the grandmother appearing to be the central figure. About once a week the members of the family who live in the vicinity gather and spend Sunday together. This is their principal form of recreation. They enjoy other simple pleasures, such as listening to Spanish-speaking radio programs and on rare occasions going to a Spanish-speaking movie.

In drawing pictures of the food she had to eat for breakfast one day, Maria showed a picture of a potato, bread, milk, an egg, a tortilla and some beans, suggesting, at least, close ties with the Mexican culture.

The Catholic religion evidently is an important factor with this family. One corner in the main room of the house is used as an altar. On it are gaily colored artificial flowers and a vigil lamp which burns constantly.

Education. Nothing is known about the father's educational background but Maria's mother went as far as the 7th grade. In an early discussion with the mother, she indicated she wished to give her children as much education as she could "possibly afford." She did not state what her definite desires were; therefore, it is assumed that what the children can have will depend definitely upon her ability to pay for it.

Summary. It must be assumed as Maria's case is reviewed that often the academic performance of bilingual children is not only adversely affected (according to our present school standards) by their bilingualism, their differences in culture, and their socio-economic conditions, but it also may further be affected by emotional factors which threaten their security, their need to be loved and wanted.

PEDRO ESTRADA

Pedro Estrada is from a family in which four older brothers and sisters were not educated beyond eighth grade. His father had only one year of schooling (in the same school Pedro now attends), and his mother has had no schooling at all. There is no expressed intention for his education to extend beyond elementary school. His father said he would like his children to have more education, but his reason for not planning for or expecting them to do so is very simple and definite. "I am a poor man," he responded to an indirect inquiry on the subject.

The Estrada family lives in Community A, with seven adults, four children, and one baby in the small adobe and frame house. The family group includes the parents, six children (of whom Pedro is the youngest), a nephew, a son-in-law, a daughter-in-law, and an infant grandson. A dirt sidewalk and street lead to the house which itself has a hard-packed earth floor. The only heat in the structure is provided by a wood-burning cook stove over which hang pots and pans blackened from being set directly over the open fire. Other furnishings, with one exception, are old, battered, and without much original paint remaining. The exception -- and it too bears the signs of hard and continuous wear -- is a television set adorned by a white doilie and a little vase of artificial flowers. It is in operating condition.

Also living in the little house at frequent intervals are a rather thin-looking dog and a chicken, both of whom wander in and out quite freely.

Pedro's father works for the Water Users Association, and his earnings are about $40.00 a week. His mother occasionally works in the radish and onion fields near Community A, earning around $3.00 per 100 pounds of produce. His two older brothers, brother-in-law, and father all have laboring jobs with the Association, digging and cleaning ditches; the work of the younger men is especially irregular. In fact, his brother-in-law was recently out of steady employment for five months.

Now let's look more closely at nine year old Pedro Estrada, the pattern of whose educational, economic, and perhaps even geographic future seems to be already rigidly set.

What does he look like, act like, respond to?

How advanced is he intellectually and academically?

What impression does he make on people at first -- and after they have known him for a while?

How well can they get to know him?

Pedro is quite dark, with straight, rather thick hair that is often in need of cutting. He is of average height and weight, but perhaps a little huskier than most of the children in his room. When questioned about a scar under his chin, he merely shrugged his shoulders, but reluctantly nodded agreement when it was suggested that maybe it was the result of a fall. Occasionally his sturdy blue jeans and sport shirt or Sunday-white-shirt-in-wearing-during-the-week are clean, but most often they are not. His clothing is usually of fairly good quality and not very old. Sometimes he wears no socks under his high-top shoes. His hands and nails are frequently dirty. He is badly in need of dental care.

His relationships with children are much more outgoing than those with adults. He frequently takes a leadership role, although in both playground and classroom activities he freely accepts group decisions. He especially enjoys working on manual tasks with small groups of boys, and shows maturity in recognizing and assuming responsibilities. His leadership activities are diplomatically assumed, and he generally has a purpose and plan in mind. He unobtrusively gets others to help him carry them out, considers the welfare of his co-workers and assistants, and when the task is completed he retains their support and admiration. A recent teacher of his observed that he has rigid control over his emotions and "like most of these Indian children, Pedro shows a tendency toward stoicism."

He is above average in coordination and physical abilities, and is acknowledged to be the best ball player in his class. He has a better than average attention span, listens carefully whenever directions are given, and then goes to the task at hand quietly and efficiently.

More of his classroom contributions are in art and music than in language, although he converses more freely with his teacher and children very close by in his classroom than with others. He is limitedly tri-lingual, speaking mostly English at school, Spanish to his friends, and Indian and Spanish at home. His accent is less pronounced than that of other children; sometimes he has difficulty understanding English, but he frequently shows a rather strong desire to learn and use English well. He shows pride in his knowledge of three languages and a desire to expand his vocabulary in all three.

His teachers all agreed on certain characteristics: Leadership qualities; well adjusted and mature development; tenacity to purpose and plan; compliance with authority; desire to learn languages; discovery and correction of mistakes with little guidance.

Their agreement extends into the academic areas, too. Although he seldom finishes work first or best, he takes criticism and corrections seriously and gracefully. He generally is the best reader of the boys in the class and always is in the top reading group. His interests toward musical, rhythmic, and art activities are strong. Arithmetic, writing, and spelling activities are at least average in comparison with the rest of the class, or sometimes above average.

His achievement and mental test scores include the following:

Gates Reading Test administered October, 1958:

Grade placement -- 2.41

He had just entered second grade (September, 1958).

Gates Reading Test administered April, 1959:

Grade placement -- 3.09

He was nearing the end of second grade.

WISC (Performance Scale) administered December, 1958:

I.Q. of 93

Arthur Point Scale of Performance Tests administered

April, 1958:

I.Q. of 124

To adults, especially "Anglo" adults (with the exception of most of his teachers), Pedro is quiet, reserved, unresponsive. A hurried conclusion may be drawn that he is slow, belligerent, and "typical" of a racial and national background. But a time exposure which permits opportunities for viewing him at home (where he participates actively and normally based on noisy childhood expectations of our current so-called "Anglo" culture) and at school (where he is the top ball player of the class, the natural leader, the eager learner of languages, and the responsive student when criticism is justly given) may encourage one to draw conclusions of a less general or "pat" nature.

Pedro, as well as all the children in this study, begins to stand out in relief as an individual whose interests, performance, relationships, and understandings vary in accordance with the full gamut of expectations one would have in studying any group of children representative of a full community. One becomes more reluctant about "typing" them, or arriving at generalizations in list form. (One generalization expressed by a major consultant for this study, however, comes to light with particular relevance in the case of Pedro Estrada. This consultant, when asked which of the three factors of socio-economic condition, culture, and language most affected the futures of these children, quickly stressed the first. It has been identified also by both of this boy's parents as the prime factor in limiting the education he will receive.)

Perhaps a few miscellaneous aspects from the young life of this child will help round out some of the basic information for the reader:

1. In drawing pictures of what he has for breakfast, a glass of milk, beans, and a tortilla are prominently displayed.

2. In two full years of schooling he was absent a total of 14 days. His general health conditions have been good.

3. Although the attitude of his family toward strangers is cautious at first, it gradually relaxes. Our social worker was surrounded by the entire family in the yard on her first visit where a chair was provided for her -- but the next time the chair was moved inside.

4. The father is very outspoken in his attitude toward the

limited speaking knowledge of English of his children. He attributes it largely to the fact that the Community A children are in a school of their own, isolated from the English-speaking children in the other town schools of which School A is a part. He is almost belligerent about the fact that the children are permitted to speak anything but English on the school playground.

5. The family attitudes toward their community are bound to affect Pedro's feelings about it. Because they have lived there for 35 years, they are strongly attached to it. Their home is there, and they own it (but not the ground on which it stands). They like their neighbors and the school; in fact, they frequently refer directly and indirectly to the school attendance worker as a community leader, one they turn to in case of trouble or need. But they do not like many factors about their community: No work right there and only limited work nearby; poor water (the new baby had had diarrhea several times); poor homes (they recognize clearly the kind of environment in which they live; television and proximity to a large metropolitan area bring this awareness close to them).

If the future can be anticipated on the basis of past events, Pedro Estrada in ten years at the age of 19 will still be living in Community A. He will have completed the eighth grade, but probably no more. His leadership qualities will perhaps be put to excellent use in his church and community, maybe in the direction of better living conditions for his family and others like them.

Or perhaps the inspirational quality of some of his teachers may encourage him (even with an interval imposed for a few years after he completes his elementary education) to continue beyond the schooling of his brothers and sisters. With local, state, and federal funds being used increasingly for identifying and educating children with talent, intellectual and/or leadership qualities, Pedro Estrada may be among those whose preparation for and contributions to life may be extended beyond *the levels now anticipated for him.*

EDUARDO TRUJILLO

For approximately two and a half years, Eduardo was observed in his classroom in one of the cooperating schools. Taller than most of his classmates, he was a poorly dressed, gangling youngster who seemed "all arms and legs." He smiled frequently, showing prominent front teeth. His shock of thick black hair was often in need of cutting. Eduardo was garrulous, indicating he was often in trouble. Visiting with neighbors and disturbing the class frequently resulted in his placement in partial isolation in the schoolroom.

Observations of the staff indicated Eduardo was "slow" as he consistently tested low in the study. He demonstrated in behavior some of the points which one national consultant to the study suggested might be indications of true mental deficiency: He did not achieve educationally; it seemed difficult for him to understand and follow directions; he handled his school materials awkwardly (except on the playground); he exerted considerable pressure on his pencil and found it difficult to conform to "lines;" he produced untidy papers; he seemed unaware of failures and his lack of academic achievement did not seem to concern him; he was hyperactive, uninhibited, and spoke indistinctly in both Spanish and English.

It was obvious from the time Eduardo was first seen that his lack of conformity to class routine and his general erratic behavior were difficult traits for his teachers to cope with and accept. He was transferred from one teacher to another as they became worn out with him. When one of the teachers was asked for an evaluation of him, she refused, replying, "I couldn't write anything more than you could write about an I.Q. of 51 (the school's own psychological test score) - I just don't know what I could write about a three-year-old."

The school principal felt that other siblings in Eduardo's family had been mentally retarded also and were further handicapped by being physically below par, since two of them had congenital physical defects.

Eduardo, born in one of the metropolitan areas of Arizona, was the youngest in a family of five children and was the son of a farm laborer. He and his siblings were second generation Americans. Their parents were born in the United States, but their grandparents on both sides of the family were born in Mexico. The parents and grandparents all had been farm laborers whose employment had been marginal. During one period while the study was in progress the father was unemployed for approximately six months and the family had to live on unemployment compensation. According to Mr. Trujillo, this "was not nearly enough for my family - there are just too many chiquitas (children)."

In spite of the marginal character of the Trujillo family's economic situation, the parents seemed to have little drive to see their children achieve more than they themselves had done. Both parents realized the necessity for their children to work, but with regard to the kind of work they wished them to do, there seemed to be little desire to improve.

Mr. and Mrs. Trujillo had little schooling. Mr. Trujillo attended only two years and his wife not at all. Therefore, at the time of interview, their children had exceeded them educationally many times as some of the older ones had been able to graduate from eighth grade. There was no attempt to send these youngsters on to high school, partly because the children did not seem to have any desire for further education and partly because the parents could not afford it. "With work so hard to get, we just can't promise (to give it to them)."

Despite the fact that Eduardo's behavior and his poor achievement in school would lead one to conclude he was limited mentally, there was always a question as to how much influence low economic conditions and general cultural background had on the way he performed. Not only was his family's income low but there was very little intellectual stimulation in the home. The family's chief concern seemed to be to provide the bare essentials of life.

The general cultural background of the family was neither completely Anglo nor Mexican but was tied to both. The family celebrated some of the Mexican holidays as well as the Anglo ones. The occasion they liked best was Christmas. Mrs. Trujillo always prepared tamales on this holiday. Family birthdays were also celebrated. They were asked whether or not they ever had pinatas (used often by other study families on such occasions). To this they responded by saying, "Most times we can't afford that. We had one just one time." Once in a while the Trujillos would go to a movie, but usually this was a Spanish-speaking one since the parents were unable to understand "the American ones." The Trujillo family took little part in the affairs of their community. They belonged to no clubs or organizations, nor were they members of the school's Parents' Club or any church organizations, although all members did attend church (Catholic Church). About the only contact the family had outside their own environment was through the medium of TV which they all enjoyed. Even here the programs selected had to be those the family could understand.

The mother spoke very little English and when she did the construction of her sentences was poor. Although the father attempted to speak English more often, his vocabulary was quite limited. Spanish was spoken almost exclusively by all members of the family but not a pure form of the language - only the dialect spoken along the "border." Neither parent could read or write in Spanish or English and there were no books or magazines received in this home in either language. The situation seemed to be not one of bilingualism but one of "confused-lingualism" as described by one of the national consultants who assisted with the study.

Living conditions for the Trujillo family were poor. They occupied one-half of an older type single dwelling and the opposite side housed another family. The seven members of the family lived in three rooms for which they paid $28 a month. There was a cold water tap in the kitchen only and no bathroom. For bathing the family used a tin tub. There was a flush-type toilet located outside the house near the kitchen door. The furnishings of the home were of mediocre quality and were functional only, with the exception of the TV set which appeared to be the most important item of furniture in the house. The family had lived in the neighborhood most of the time since the children started growing up and there seemed to be no desire on their part to move.

Besides the foregoing economic and cultural factors which appeared to have bearing on Eduardo's school performance, his behavior undoubtedly was affected by the fact that he was the last child in the family and had probably been "spoiled" by his parents and siblings. Furthermore, since he was a boy, and in a family of his cultural background, he may have been pampered further as it appeared to be the tradition in cases under observation. Eduardo was found also to have a slight visual handicap when his eyes were tested by the school physician in February of 1959.

Throughout the case history of this boy and his family, there was support for the school's position that this was a mentally retarded child. The fact that his academic work had been consistently "unsatisfactory" could not be ignored. Supporting this also was a statement from his mother that his early development was "not fast." She reported he did not begin to say words until after two years of age. Two of his teachers indicated his speech was heavily accented and difficult to understand, even at the middle of his fourth grade. All of the teachers described him as a child who, at times, was uncooperative with the group; one who seemed to require extra supervision and prodding, even in undertakings of moderate duration or difficulty; and one who seemed unimaginative and gave little evidence of creativity or originality.

On the other side of the ledger, and in spite of this seeming evidence of true retardation, there were some inconsistencies which made the staff wonder whether or not the condition observed might have been partially pseudo-retardation. On the first of the series of psychological tests given by the staff psychometrist, Eduardo's low score was considered an underestimate of his ability and was thought to be due to his poor motivation, impulsiveness and extreme lack of attention. The inconsistency in the child's performance gave a spurious effect to the I.Q. score of 61, and the examiner further felt that Eduardo "cared little whether he did well or not and was only interested in having fun his way." He was described further as "a hyperactive boy with more intelligence than indicated by this I.Q; but no ball of fire as far as native ability goes." On this test, another of the indications of possible pseudo-mental retardation was the fact that on the stencil, which required abstract thinking, his performance was "pretty good despite low motivation." It was also observed that Eduardo's low I.Q. was due to "behavioral patterns rather than being a true mental deficiency."

Staff observation made at the middle of Eduardo's fourth school year indicated he was a child who possibly could excel in physical activities if they interested him. One teacher reported that in classroom activities which attracted him, he showed high persistence and was able to carry through on assignments. He appeared to be able to hit a baseball farther than almost any of his seemingly brighter companions. Another teacher reported that while he read with the slowest group in his classroom, he was "at the top of the low group." Two of the teachers agreed that the child was quite sympathetic with others and frequently offered to help and sometimes defend "the underdog." Two of the teachers also reported that although he was disruptive in the classroom, he did not appear difficult to control.

It was the consensus of teacher opinion that Eduardo was limited mentally, but the degree of mental retardation was a matter of opinion. One felt he was "below average"; the other two felt he was "very dull".

LUISA CHAVEZ

Luisa, a quiet, shy little girl, appeared more capable than tests indicated, and might fall into the "pseudo" category. She listened to and followed directions given by her teacher, was conforming, and yet seemed to have original ideas. She was in the most advanced group in her classroom, was able to work independently, and gave other indications of being a bright child.

Luisa, like most of the children in her school, was from a family whose educational standards were not high. The parents each had one year of schooling. The family was Spanish-speaking and the economic level was low. The cultural ties were largely Mexican. These factors may have limited her scoring on the standardized psychological tests given and may be responsible for her leaving school prematurely.

Luisa scored high on the first two psychological tests given her, in contrast to most of her classmates, but in spite of this, the final results were under what they should have been according to the first examiner. On the third test, her tendency to give up quickly entered into the picture and her score was lower.

Psychometrist's evaluation. The first of the psychological tests, the Arthur Point Scale, was given Luisa in 1958, when she was 6 years, 7 months of age. On the test she scored a mental age of 7 years, 11 months and an I.Q. of 120, which, according to the examiner, was under what she might be capable of, but still one of the highest scores in her school.

She worked fast but when faced with difficult items, she tended to settle for inferior responses rather than to try hard. ("She understood English quite well and could express herself well when she tried. Although she said Spanish was spoken in the home, she wouldn't speak Spanish. She understood it, however.")

A WISC Performance Test was next administered during the second phase of the study on February 26, 1959. On this test the child's score dropped to an I.Q. of 106, which again was one of the high ones in comparison with others in her class. She was described by the examiner as being "a rather shy child - no spontaneous comments." The examiner thought the vocabulary test was not valid, for "although she comprehended directions well, she seemed to have a lot of difficulty verbalizing and was hesitant." Luisa was 7 years, 5 months of age when this test was given.

The third psychological test, the Arthur Point Scale, was again given on November 13, 1959. On this, her scoring dropped still more and her mental age score was 6 years, 7 months and the I.Q., 81. The examiner indicated the child needed encouragement and tended to "give up quickly." This affected her score and the examiner observed she could have done better "only if she is encouraged a great deal."

The child. Luisa was a slender child who in comparison to other children in the classroom was somewhat shorter but looked well-developed and well-nourished. She was a round-faced little girl who seemed deliberate in her movements but was nonetheless agile and graceful. The child had light brown skin coloring, dark brown eyes and hair neatly combed, plaited, and worn in pigtails with bangs. She was adequately dressed but her clothing, although clean, was of modest quality and not particularly attractive.

Luisa seemed fairly happy and quite secure in her social relationships. She was accepted and well liked by other children, although her shyness prevented her being a leader. Luisa's teacher described her as being a compliant child who entered freely and helpfully into group activities and one who applied herself conscientiously to tasks assigned to her. Furthermore, she was a responsive child and one capable of serious purpose but also one who tended to take things as they came. The child was right-handed. She handled school materials well and seemed to have good coordination. She started reading slowly and for a time read in both the "second" and "first" reading groups in her classroom. But, according to her teacher, she was "doing better all the time."

Luisa would converse with her classmates but seemed to hesitate to talk or take part in classroom activities involving verbal responses. She used English exclusively in the classroom, but had difficulty in pronouncing some English words and had a noticeable accent.

The child appeared to be in good health. She had suffered no serious illnesses other than two childhood diseases - chicken pox and measles - and had been given the usual immunizations. Her attendance in school was regular.

According to her mother, Luisa was a full-term baby born with a doctor in attendance at a San Antonio, Texas, hospital. She was bottle-fed from birth, walked at one year, started talking (Spanish) at about the same time. Her early development and rearing progressed "normally," according to the parents.

The home and community. The Chavez family lived in what was known by school people as an area of "less privilege." It was crowded, had inexpensive housing, and was, in fact, an "island" inside the city, inasmuch as it was outside its corporate limits, although geographically in its center. Because of this situation, it was not entitled to city services such as police and fire protection, street maintenance and garbage collection. The area had narrow streets and cheaply constructed houses which were owned, in most instances, by the occupants.

The Chavez house, however, was rented. It was a small frame dwelling set back from the street a few feet and enclosed in a cheap wire fence. It contained three small rooms for which the family paid $25 per month, plus utilities. The house was lighted by electricity and heated by small gas heaters. There was cold water only inside and bathing was accomplished by means of a tin tub. Toilet facilities were on the outside, a privy. Because there were no closets in the house, the family wardrobe hung across one corner of the room on a pole. The home contained only the most essential furnishings with one exception -- a TV set which seemed to be the family's chief source of recreation.

Even though the rooms were crowded, they appeared to be neat and clean and as well arranged as possible under the circumstances.

Her family. Luisa's family consisted of the parents and nine children ranging in age from one and one-half to 17 years. One child died at birth. There were two boys in the family; the remainder were girls. Luisa was the seventh child in the family. The parents were both citizens of the United States, although both were of Mexican background. Mr. Chavez was born in the southern part of Texas. His parents came to the United States from Mexico three years prior to his birth. He was one of 12 children, all but four of whom are now deceased. Mr. Chavez's father did farm and ranch labor all of his life and this was his legacy to his son, Luisa's father, as he himself engaged in this same occupation before coming to Arizona.

Luisa's mother was a woman of about 45 years of age, born in Monterey, Mexico, and brought to the United States with her parents when she was only a year old. Her family never returned to Mexico but lived in Laredo, Texas, for some time after arriving in the United States. She was one of eight children and, like Mr. Chavez's family, was a child of a farm laborer.

Religion seemed to be important to this family as they appeared to adhere strictly to Catholic teachings, and Mr. and Mrs. Chavez were married by a Catholic priest in their church in Texas.

In the several interviews conducted with Luisa's parents, there seemed to be an underlying concern with earning a sufficient livelihood to meet their needs. The father said one of the reasons he liked Arizona more than Texas was that he could now earn more than he did previously by doing farm labor there. "I used to earn only $40 a week in Texas." Mr. Chavez was, at the time of the interviews, a laborer in the construction industry. He said he belonged to a union which sent him wherever there was work. For the first three years after becoming a member of a union, he worked for the same company and earned between $60 and $80 a week. He was proud of the fact that he had been able to increase his earnings since coming to Arizona, and he liked working for this company, saying, "They were good to me. They gave me two weeks' vacation with pay." At the time of the interview, however, Mr. Chavez had to go wherever the union had a job and he never knew when he would be laid off. "I go for several days or several weeks and I'm laid off for a day or so. It's not good." His most earnest wish seemed to be for steady work.

As the children in the family became older, their needs for more money increased. Yolanda, the oldest girl, quit school when she was in fifth grade and went to work at a laundry. She said it was because she really didn't like school. But the next oldest girl, Juanita, earnestly desired more education, but considered getting a job also as she did not have the proper clothing for school. She wanted to find a position during the summer doing light housework or baby-sitting, but jobs for teenagers, particularly of Mexican background, were difficult to secure.

Her cultural background. Most of the children in the Chavez family spoke English quite well. However, Mr. Chavez had a decided accent and spoke English only with difficulty while his wife did not attempt to speak English at all, although she seemed to understand much of what was said. The parents attributed failure to learn English to the fact that "more white people speak Spanish in Texas than they do here in Arizona," and "all the white people in Texas speak Spanish as well as English." In discussing the ability of the children in the family to speak English, it was mentioned that the older children helped the younger ones so that most of them learned English before entering school. The basic language, however, between parents and the children in the home was Spanish. Both Mr. and Mrs. Chavez read, wrote, and spoke Spanish but only Mr. Chavez attempted to read and write English, and this to a very limited degree.

Concerning family recreation, the parents reported they enjoyed most going to a drive-in movie which showed Spanish-speaking films only. But the Chavez children preferred "the American ones." There were no newspapers or periodicals subscribed to in this home, and when asked about this, the father shrugged his shoulders and said, "It would do no good - I cannot read them." When Mr. and Mrs. Chavez received mail which they didn't understand and which seemed important, they would take it to one of their two cousins ("who know about those things") for interpretation and advice.

Education. Luisa's parents had no more than one year of schooling in their lives. At the time of interview on this subject, their children had gone farther than the parents by several years. The next-to-oldest child, Juanita, graduated from the eighth grade at the time the study was in progress. The younger children attended school regularly. There was a child in almost every grade in school as there were eight Chavez children in school at one time.

Mr. and Mrs. Chavez would have liked for their children to go through high school. However, the decision to send them seemed to depend solely upon Mr. Chavez's ability to finance further education. The family was in a quandary trying to decide what to do about Juanita. She was ready for high school and eager to go, but she did not have good clothes and her parents did not know how they would be able to buy these for her. They felt that unless she could obtain a job during vacation or after school, she would be forced to remain at home. Luisa would continue grammar school "for the present," but inevitably the same decision must be faced with her.

Her chances in life. Mr. and Mrs. Chavez did not seem anxious to commit themselves with regard to their children's future. They wanted to have them obtain as much schooling as they could, but schooling costs money - even public schooling. They recognized also that the kind of work the children could do as they matured depended, in large measure, upon the type of preparation they had. Mr. Chavez himself became a farm laborer as his father did, but had gradually gone up the income ladder a few notches. With regard to what the boys in the family would do, Mr. Chavez said, "The boys - it depends on their education. If they don't finish school, they'll have to do just like me - work at whatever they can." Regarding the girls, the parents spoke about the second oldest child: "She wants to be a secretary and will - if she can go to high school." They had hoped she could have that chance because she liked school. "She has a good record - gets good grades and wants to finish." So it was with the Chavez children, including Luisa. Their future seemed to depend upon the ability of the family to afford educational opportunities for them.

CARMEN SOLANO

In a report on one of the intelligence tests administered to Carmen Solano, the psychometrist wrote, "Waif-like little girl -- very thin, with huge dark eyes, long dark hair...eager to please, eager for attention...unaware of her failures." Whatever the cause is, there is close agreement among those who have worked with Carmen that she is either in the educable mentally retarded group or in the so-called borderline, slow-learning category. An Arthur Point Scale Score of 76, a WISC I.Q. of 62 (on the performance part), the reaction of a sensitive, insightful teacher that she is below average, and her limited school achievement -- all of these combine to present a picture of less than average ability and potential. Carmen seems not to be in the "pseudo" category.

Her personality and needs appear in many little ways, small in themselves, but indicative of what kind of person Stella is and will become. It is the accumulation of what seem to be trivial that tell her story best. On the way to the testing room she grasped the psychometrist's hand. Before being interviewed by the social worker, she took her hand, kissed it, and put the social worker's arm around her shoulders, frequently pressing the back of her hand to her own cheek. Her extreme thinness, poor teeth, and frequent lack of vitality are all symptoms of a physical condition needing attention. Her distractibility, unresponsiveness, and inability to apply herself constructively are all important segments of a personality limited by intelligence, physical condition, and/or environment.

In viewing her setting, one sees poor housing and low income, with no possibility of improving either one of them. Her father is a hotel bus boy, earns about $6.00 a day, and uses it to help maintain a family of two adults and seven children. The children range in age from three to thirteen, with Carmen in the middle. Their frame rented house is located in an alley where most of the surrounding area is industrial. Their home consists of two rooms for which they pay a rental of $17.00 a month. The streets around are of dirt; there are no sidewalks and the yards are untidy with trash littered about. The drabness of the neighborhood and of the house itself are relieved by only one bright spot -- a healthy stand of sweet peas blooming near the front door.

The main room of the two within the house serves as both living room and bedroom. It is extremely crowded, with two double beds, crib, and sewing machine. The sleeping arrangements are very complicated, with two children sleeping in the kitchen, one with each parent, another on the floor between the two beds, one in the crib, and the remaining one in the grandmother's house to the rear of this one. A television set stands prominently on a pedestal at the end of the room.

Both parents were born in the southwest. Neither finished elementary school, but both have higher educational aspirations for their children. Mr. Solano would like the children to finish high school, but he says he cannot predict what he will be able to do to help them. Their immediate educational hopes are not high, however, based on their oldest child's desire to drop out of school, their assumptions that children marry early these days and do not listen to the ideas of their parents, and their belief that despite all of the opportunities available to children they do not take advantage of them. Mr. Solano regretted having gone only to third grade in school himself. Although Mrs. Solano went to sixth grade she can neither read nor write either English or Spanish. "I didn't learn very much," she apologetically stated.

Both parents like their neighborhood and neighbors. They live "close" to the father's work (an hour's walk each way, requiring him to awaken at 4 A.M.), and they approve strongly of the school their children attend. They have lived in their present location for twelve years, and are now concerned over rumors that the property has been sold to a trucking company and the buildings will be torn down.

Other than the television set, they have no possessions of value -- no car, no telephone, no valuable furniture or personal belongings. "Things might have been different," Mr. Solano mentioned on one occasion, "if I had my father's ranch, but my family lost everything."

The barrenness of family life comes out in several ways: The family members do little together except watch television. They do not go on picnics nor do they engage in any other activities together. Being tired and having neither time nor money are the reasons given by the father for the absence of family activity. The parents belong to no organizations, have never attended a PTA meeting, and have no friends outside their immediate neighborhood.

In this small house, crowded with children, and with not even a remnant of either the Mexican cultural background or the United States cultural contributions, Carmen is growing up -- limited intellectually, poor in school, and physically weak in appearance. In her home Spanish is the dominant language, but neither Spanish nor English literature is represented in any way.

She is one of the smallest children in her room. Her skin has a pallor rather than a lightness to it. Dark circles beneath her eyes, hair so soft and thin that the scalp can be seen through it, thin, worn cotton dresses on chilly days, dirty arms and legs -- these are what one notices about Carmen. When classroom games are suggested that require action she frequently refuses to participate, sometimes hiding her head in her arm on the desk. When she does participate, her movements are not graceful and she has trouble remembering simple routines.

In the interview situation with the social worker another aspect of her personality came out. She was talkative, uninhibited, and almost hyperactive, but very immature in her responses. Her attention span was extremely short, and the conversation flitted from one subject to another. In all the toys and puzzles available to her, she found nothing of interest until she finally found a puzzle much too difficult for her. Her efforts were almost solely on a trial and error basis. Her knowledge of English was very limited; words often understood by other children in her room had to be explained to her. Her expressed wishes were limited to ice cream sodas and candy. In her games she cannot count past ten in either Spanish or English (at the age of almost 9). Her stated attitude toward school is rather reserved.

She is in the poorest reading group in her room, and has difficulty keeping up with it. She can follow directions adequately if they are not complicated. On a Gates Reading Readiness test administered to her in October, 1956 and March, 1957, her score was "0". After two years of schooling, her reading test indicated a 1.8 grade level in both vocabulary and comprehension. In a picture of her family which she drew when she was eight years old, all the figures are fairly similar in size -- and all without arms, legs, and ears.

Several significant characteristics of Carmen appear in an evaluation by one of her teachers: Anxious about social relationships; easily influenced; unresponsive and apathetic; attention wanders; unimaginative; little realization of failures; below average in coordination; difficult for her to understand classroom situations. "Carmen's attitude toward English is similar to her attitude toward most other concerns. She expresses a desire for it, but is unable to apply herself constructively." She has a distinct accent, and often seems not to understand what is said to her in English.

Another teacher described her as over-emotional, disturbed, sickly, withdrawn. Her inattentiveness, low level of coordination, and lack of imagination were also noted.

A number of factors about Carmen stand out as one observes her in the classroom. She frequently lacks vitality and her work seems difficult for her to grasp. Often, in answering questions, her efforts are merely random guesses, an expression of almost anything that comes to her mind, and yet an eagerness to please and to be recognized. She wants to follow directions, and does so apparently when she is capable. Her distractibility sometimes results in her becoming a disturbing influence to other children. On the playground (as in the classroom) she seems happy, although here, too, her activities are often disjointed; her vitality is at a higher level outside than in the classroom.

Carmen works in school beneath her grade level -- and the lag becomes greater as it takes on a cumulative effect each year. Her home life is so limited in culture, interests, materials, and potential that the future for her extends forward in the same restricted channel evidenced in the present. Her intellectual accomplishments, whether handicapped by environment, physical factors, or inherited qualities, show little promise of expanding beyond their current limited circles.

Carmen is objectively evaluated as a low performer by tests, teacher reactions, and other skilled observations. The vaguely expressed aspirations of her parents for their children show little promise for her. Limitations imposed both outwardly and inwardly indicate that the present, for a little girl who often seems happy, will extend into the future for a young lady whose insecurity and hopelessness may not be recognized by her for what they are. Her own limited insights may keep her from seeing both them and her narrowly circumscribed future, as they seem to be forming so tightly around her today.

The case studies presented in this chapter represent pseudo-mental retardation, perhaps real mental retardation, brightness, frustration, current needs, adaptability, leadership, and acceptance of what the present offers and the future seems to promise. All of the characteristics one observes in a large group of children are visible here. All of the attitudes of children toward home and community, and toward children by their teachers and parents, are in these cases and the many they represent.

Such case studies help develop an understanding of the difficulties stemming from the cultural, socio-economic, and language settings discussed in this study. But it must be recognized that only a part of a community is seen through these brief cases representing only a relatively few families.

The door of insight and understanding may be opened by them however, but it is an opening wedge to a problem of geographic and human magnitude only limitedly seen here.

CHAPTER VII

SUMMARY AND RECOMMENDATIONS

Introduction

That each child is entitled to an education to the limits of his intellectual capacity, as great or as limited as that capacity may be, is a belief most people hold as part of the American way of life. Implied in that belief is that there is a means to identify, measure, and evaluate the intellectual capacity possessed by each child. However, the fields of psychology and education have long recognized limitations faced in investigating accurately the capabilities and potentialities for learning which some children possess.

The 20th century has brought a respect that is not always warranted for various tests used in school situations. On the basis of a child's background and home conditions a specific test may be inappropriate. It may not measure learning capacities a particular child has, nor be based on experiences produced by a different kind of environmental background.

One group that has frequently been penalized through erroneous testing and test interpretation is the so-called bilingual category, the children who in the early years are frequently "uni-lingual" but in a language other than English. The second language is often accompanied by a second culture and also an awareness of a different socio-economic group, one represented by teachers and administrators.

Their language, cultural and socio-economic differences may be reflected in school records that seem to indicate mental limitations. Are such limitations real or pseudo? It is with that problem that this study has basically occupied itself. Perhaps through this effort at describing and explaining these children and their homes, schools, and communities in a longitudinal manner, some new insights and understandings will evolve, some adjustments will be made in school programs in which these children are involved, and some adaptations will be made in the teacher preparation programs which produce the teachers with whom these children will study.

This project consisted primarily of collecting, examining, organizing, and evaluating pertinent data from a sample of 188 bilingual children, and identifying factors related to mental retardation and/or pseudo mental retardation. Through interviews, observations, and tests carefully selected for this study, in addition to instruments especially developed for it, such evidence was gathered. It was accumulated from home, school and community, and from the children themselves, their parents, teachers, school administrators, community personnel, and consultants knowledgeable in the field of bilingualism.

Relationships of language, cultural, and socio-economic differences to true mental deficiency, pseudo mental deficiency, school, home and community experiences of bilingual children and parental attitudes and levels of aspiration were factors in the study of these children and their academic and related potentialities.

Among the basic ingredients of this project were the following:

Time -- three years, from June, 1957 through June, 1960.

Location -- selected classrooms on the first and second grade level (in 1957) from three elementary schools in a heavily populated area of the Southwest.

Subjects -- the children referred to above, but within the framework of their family and home, their teachers, school administrators and school setting, and their friends, siblings, and community contacts.

Staff -- professional staff members from Arizona State University, plus an experienced social worker and a secretary, all working closely with school personnel in a team approach.

Consultants -- a number of local consultants and three invited to participate from more distant points:

Dr. Edgar Doll, Bellingham (Washington) Public Schools;

Dr. George I. Sanchez, University of Texas; the late

Dr. L. S. Tireman, University of New Mexico.

The bilingual children in the study were members of classrooms somewhat adapted to their needs, and their teachers were selected on the basis of their willingness to participate. The participation of the latter group was limited to that of transmitting data about the children and completing evaluation forms about each child.

Early in the plan for the project an effort was made to state certain hypotheses whose study could bring a basic understanding of the educational and related needs of these children. Such hypotheses were as follows:

1. Mental retardation is apparent among some bilingual children but often is pseudo rather than real.

2. Pseudo mental retardation is the result of many factors, including socio-economic, attitudes, family background and others.

3. Bilingual children may, indeed, have higher mental abilities than recorded, as demonstrated by the fact that they have developed some facility with two languages.

4. Typical school programs are not adequately designed to meet the needs of and bring out the full potential of bilingual children.

5. A descriptive study of bilingual children is defensible on the basis that there is a possibility of developing better understanding of the bilingual child to the end that a better educational program can be devised for him.

Ignoring a problem that is apparent to teachers and to those who help prepare teachers contributes little, if anything, to a solution of that problem. Nor is much gained by giving more lip service to expressions like "individual differences," "meeting individual needs," and "taking the child where he is." Behind those expressions are the five W's and an H of the journalism field (who, what, where, when, why, and how); as foundational as those questions are in writing a sound news story, they are surely as basic in efforts to establish an educational program that recognizes the specifics of need, motivation, family background, cultural deviations, language differences, financial status, and other vital factors related to a child, his education, and his total environment.

The need for this study, and for others which its professional participants hopefully anticipate that it might encourage, are apparent in facts available in the literature of this field. Any one of the following is an adequate reason for continuing study of the problems involved:

1. A high educational drop-out rate for bilingual children as a whole.

2. Low parental vocational aspirations for many of these children.

3. Limited and erroneous information of teachers and administrators about the learning capacities and family backgrounds of these children.

4. Need for continually evaluating and adapting methods of teaching and child study.

5. Implications available in the study of a selected group of bilingual children that extend to all groups of bilingual children wherever they are located and to all groups of children whose socio-economic, cultural, and language differences affect their learning and educational programs.

A university becomes concerned with a problem of this sort when it recognizes its complete responsibility for the preparation of teachers in the locality where it is, and when it sees how much more it is necessary for teachers to know about specific children and educational processes in order to give a full measure of learning to those children. Reconciling the factors of ability, achievement, and aspiration for each child depends upon a university's willingness to 1) evaluate its objectives and offerings, 2) recognize its function as a community institution, 3) allocate time and skills for research in the problems of which it is aware, and 4) use the results obtained for improving its program. In a setting of vibrant discussion and action, and of a probing and searching effort, research of the kind attempted here can take on meaning and values intrinsically tied in with a local geographic area, but also with serious implications for teachers and children everywhere.

The intricacies of the human equation as they evolve from a complex pattern of personal and professional relationships were apparent as this study progressed. They included the following in various ramifications based on detailed family, home, school, and project staff personalities and backgrounds: teacher-administration; parent-administration; parent-teacher; child-parent; child-teacher; child-administration; staff-child; staff-teacher; staff-parent; staff-administration. Their varying roles in the study, their varying orientation and attitudes toward education and the relationship of these children to the educative process, and their differing personalities all contributed to the expected complexities involved in a study based on human values, aspirations, experiences, emotions, and status.

As one attempts to evaluate the results of research based on such complex relationships, the place of attitudes also must be considered. Such attitudes include those of professionally successful parents who had been bilingual children and who may differ among themselves on the cultural and language settings they want for their own children, or other bilingual parents whose attitudes toward the importance and values of education vary from the negative, through the passive, to the strongly affirmative. In some families, money, or the lack of it, becomes an overwhelming factor in the continued education of even a bright child, a factor readily understandable when the source of the next meal is a constant, desperate problem.

Attitudes permeated the study from other sources too -- from the staff where bias had to be minimized, from consultants whose vast experience, subjective judgments, and objective evidence based on other research had to be converted to the needs of this project, and from teachers and administrators for whom the greater objectives of the study for large groups of children had to be substituted for the "here and now" of a particular child involved in the project sample.

Although the primary focal point and greatest ultimate value of this descriptive research are undoubtedly on children, the evaluation process has spread far beyond them and into school, home, and community, even into broad cultural patterns of which those factors are a product. Therefore, it may logically be stated that the basic "problem" is not the child, but rather the total environment or setting in which that child performs.

It is that environment or setting with which this study has dealt.

Summary

Common misunderstandings abound among persons intimately related through family or work to children in the exceptional child categories. Such misunderstandings are even more prevalent among those whose vocational activities or family relationships do not include a direct awareness of problems involved in childhood exceptionalities.

Such categories, or deviations from the so-called normal, include the physically and mentally handicapped and the gifted. In this study one category of exceptional child has been singled out for special attention -- the mentally handicapped or retarded -- but instead of approaching the issue from that reference point it was approached from another direction. That direction was the field of bilingualism, with emphasis on its relationship (or lack thereof) to mental retardation. The original questions asked were somewhat as follows: Are so many bilingual children really mentally retarded as their school records frequently indicate? What is the range of their intelligence, their ability, and their achievement? How can a more clear picture of their intelligence, ability, and achievement be obtained? What are the implications for schools, teacher preparation institutions, and communities in the information available, if that information is recorded objectively, analyzed carefully, and reported professionally?

Persons in the field of Special Education have for years attempted to remove misconceptions related to various categories of exceptional children. Terminology is sometimes an obstacle. The following questions, carefully phrased, may bring answers which indicate how far our nation must go in research and dissemination of factual information: "Which of the following words or terms are necessarily related to mental retardation -- cerebral palsy, epilepsy, slow learner, brain injury, mental illness, polio?" None is necessarily related, and adding the word "bilingualism" to the list does not change the answer.

Many problems of childhood (and adulthood as well) affect performance and give an impression to the casual observer that true mental retardation exists. Just as studies of children who are cerebral palsied or in one of the other groups itemized above indicate, the bilingual child may act or perform as though real mental retardation is present, but such performance may be due to other factors. Those factors may include one or more of the following: different language; different culture; low socioeconomic level; invalid testing; invalid test; emotional problems; physical problems.

An initial approach to descriptive research of the present type requires early identification of research that has already been conducted. The search for related studies was both fruitful and disappointing. The fruitful aspect was based on quantity, 1440 research materials in all:

469 descriptive research studies in which the investigator classified, analyzed, and interpreted test data in a given area to develop meanings instrumental to the solution of a scientific problem.

926 valuational research studies in which the investigator used information from various research studies in the field and in which he ascertained the meaning of that information by organizing it into large philosophical patterns or syntheses.

45 literary research materials which were in the form of novels, short stories, or other such creative materials.

Each of these research materials was briefed, with samples of them appearing in Appendix A. The descriptive research studies briefed included identification of the reference, and statements of the problem, procedures, instruments used, methods, findings and/or conclusions of significance to the present study. The briefs of the valuational and literary materials included identification of the reference and a list of notes of selected information and ideas of particular significance to the present study. The research studies most directly related to the basic problems of the present project were selected for summarization in Chapter II. They were presented in alphabetical order based on the surname of the investigator to facilitate use by the reader.

The related literature on bilingualism made two points quite clear, both a source of disappointment: 1) Most of the findings were inconsistent and inconclusive in showing the effects of bilingualism on the education of children; 2) most of the studies stressed implementation and details of methods and materials rather than diagnosis and identification of behavior outcomes related to socio-economic and educational influences. The conclusion must be drawn that, although implementation is of great importance, some of its significance is lost when it is not accompanied or preceded by diagnostic work as a foundation approach.

Because a thorough search of the literature failed to disclose a comparable body of descriptive data about any large intact group of bilingual children similar in characteristics to the sample of this study, the major need was for the accumulation of pertinent descriptive data about these children, their families, and their communities.

Each of the selected children was, therefore, tested three or more times with individual psychological tests of mental development, tested annually with group tests of educational achievement, observed in the classroom situation, and a sample was individually interviewed. Every home was visited at least twice and detailed records kept of those visits. Teacher observations of behavior and language were recorded each of the three years on lengthy forms developed for those purposes. All information was collected in well-organized cumulative folders set up for each of the 188 children in the study. The extensive case record developed for each child also included a chronologically recorded series of case reports made by the project's social worker, census data from the schools' permanent files, and a photographic record of the physical development of each child.

Individual psychological testing instruments used in the study were the Wechsler Intelligence Scale for Children and the Grace Arthur Point Scale, the latter having been administered twice to each child.

Group tests used included the following:

Gates Reading Readiness

Gates Primary Reading

Gates Primary Reading, Advanced

California Achievement

Stanford Achievement

Otis Alpha

Otis Beta

Following are other instruments which were used; all, except the last one, were developed especially for this study, and appear in Appendix B:

Identifying Data on Child and His Family

Identifying Data on Child's Home and Community

Teacher Report of Student Behavior

Teacher Report of Student Behavior (Language)

Classroom Observation Guide

Language Summary

Questions Used in Structured Interviews with Children

Questions Used in Structured Interviews with Parents Regarding Home and Community

Identifying Data on Cooperating Teachers

Child's Medical Record (Child Welfare League of America)

In addition to the exhaustive records kept on all the children in the total study, during the second year 35 children were selected by a stratified random sample for individual interviews. This procedure was used to obtain additional information regarding language ability and to obtain additional insight into the child's world, including interests, attitudes, problem solving, and general behavior.

Influencing all of these factors are the broader geographic area in which a child lives, the community, the more limited neighborhood, and the intimacy of family life. Each of the case folders accumulated as background information for this study provided details regarding the total and immediate environment of each child studied. Every folder furnished a specific picture of the setting that would either contribute to or limit the growth of the child. All three communities received detailed coverage in this manner.

Community A with its Yaqui Indian and Mexican population, located on the outskirts of a large city, and possessing an interesting historical background, a strong religious orientation, and very limited community facilities presented a unique pattern of growth, status, and occupational organization. This community had few business establishments, almost no paved streets, was involved in a dispute over who owned the land on which it was established, had few recreation facilities, and its people were characterized by spotty earnings and job-holding records. Its women rarely worked outside the home except during the cotton-picking season. As poor as the homes were, almost all of them were owned by the families in them. Most of the homes had electricity (80%), their water was usually obtained from a cold water tap in the back yard (and it was of a poor-tasting quality), and both heating and cooling facilities were often inadequate or non-existent. In about two-thirds of the homes heating and cooking used the vehicle of a wood-burning stove, and almost all had outside toilets.

The school in Community A was built on a piecemeal basis, most of its classes being in barracks-like structures. Its facilities were very much inferior to the other schools in the district to which it belonged.

Communities B and C were both located near the center of a large city, and were mostly commercial and industrial. They included one four-square block section which was a small community in itself, close to the business section of a metropolitan area and yet outside its corporate limits.

Homes in these communities varied from tin-and-cardboard structures to adobe, frame, and masonry construction. Two-thirds of the families rented their dwellings and had lived in them an average of seven years. The average family had seven persons in it, lived in three or four rooms, and paid $26 a month rent. Almost all had electricity, half had both cold and hot water, and most had some kind of cooling and heating. Nine out of 10 families had television, and two-thirds had telephones.

Recreation facilities were available through public parks, a public library branch, television, and "downtown" just a few blocks away. Clubs, other organizations, church auxiliaries, and PTA groups also provided recreational outlets. Religious activities seemed strong. A high proportion of the families studied (one-fourth) depended on welfare aid for economic support.

Work was less seasonal than in Community A, but unemployment and low earnings were still serious. Few of the men were self-employed, and few of the women worked outside the home.

School B's first classrooms were built in 1912, and almost all of them are of brick construction. It has facilities for cooling, flourescent lighting, an average class size of 26.2, and access to an excellent school district library of books and audio-visual materials. About 60 per cent of the children participated in the school's hot lunch program, and half of them were on a "free" arrangement basis. School C's neighborhood was formerly one of the city's finest, and with its porticos and columns, the building was quite a showplace. Its students came from the mid-town area of the city, with 300 of the 625 students transported by bus; 90 per cent of the children are of Mexican descent.

A summary of facts, figures and descriptive materials, even though they may fail to penetrate into the way a child really thinks, acts and learns, can still furnish a frame of reference for studying children and their environment. But they neglect a part of the story that only seeing a child, listening to him, watching his expressions, and sensing his attitudes can provide. In the extensive case histories of each of the 188 children, a serious effort was made by the project staff to obtain a rounded view of each subject, of how he looked, acted and felt over this period of three years, in school and out.

Because such case information was too lengthy to include in its entirety, composites of a few of the children were developed and presented in capsule form. Through these abbreviated presentations an effort was made to indicate the vast variations among these children and to dig beneath the surface into the aspects of culture, socio-economic, and language differences that the gloss of generalizations tends to hide. Here was something of the poverty, the barrenness of some of the homes, the absence of books and other reading materials, the low parental aspiration levels -- but here also were some homes where efforts to reach outward were apparent.

Just as interpreting data collected and tabulated for a child may be revealing, so, too, is listening to and discussing the ideas of consultants brought in to view and react to a new approach toward problems long known to them. Their subjective judgments based on competent observation and long experience, their encouragement to depart from a statistical treatment when materials were not amenable to it, their warnings regarding excessive standardizing and generalizing when both were unwarranted, their calm advice to teachers who erroneously thought an entire new teaching method and approach were necessary in teaching these children, lent strength to staff efforts. Encouragement came through comments like these, "To the extent that we can change materials and methods, adapting them to these children, we will have stars in our crowns."

In the framework of challenging ideas provided by the consultants were many worthy of discussion and perhaps even debate in communities where bilingual children live. A few examples follow: The importance of kindergartens, especially for the under-privileged; the dangers in arbitrary assignments of bilingual children to two or three years in first grade; recognition of the idea that no special teaching "formula" is required for these children; the flexibility of I.Q.'s depending on age, maturity, the teacher, the psychometrist, the specific test used, and many other factors;

the place of television in learning another language; assimilation versus acculturation; the need for developing pride in one's origins; family attitudes as they influence motivation of children; bilingual groups in parts of the country other than the Southwest, in areas where school progress and records have few of the limitations apparent here and where socio-economic levels also happen to be on a widely different, and higher plane.

The vehicle of a new research study encouraged dissemination of the wisdom of these consultants, an awareness of their ideas among some who had not heard them before, and an application of them to a project that profited from the breadth of research and personal knowledge they represented.

On the basis of test data and other information accumulated about these children, the following findings emerged which provide insights into their lives at home and at school, their total environments, and perhaps their future as well:

1. The median number of siblings per family in the study was approximately twice the national average, and more than nine per cent of the children came from families with 10 or more children.
2. Almost 10 per cent of the fathers for whom the information was available had no schooling, and only four per cent had completed high school.
3. The median family income of $2161 placed these families in the lowest quartile nationally, with 50 per cent of the children from homes with annual family incomes of $1686 to $3900. The income range was $900 to $8000, and the source of support extended from public assistance, part-time cotton picking and other unskilled jobs to full-time employment in the skilled crafts and business ownership.
4. In one school the children on the average were retarded a full year on the basis of age in grade when they entered first grade. In all three schools studied the children were behind their contemporaries academically by the time they reached second grade.
5. Bilingual children included in this study appeared to be retarded in both achievement (reading, language, and arithmetic) and ability (performance and verbal). Most of the measures of so-called mental ability showed median performances at roughly one standard deviation below the mean.

6. Achievement test scores varied from one subject area to another. The median grade points on reading tests were lower than expected grade levels to the following extent: .15 in second grade; .60 in third grade; 1.5 in fourth grade. In the California Achievement Test administered in fourth grade, a greater deficiency was found in reading vocabulary than in reading comprehension. Arithmetic achievement varied from .1 to 1.17 grade placement below expectation and English usage, grammar and spelling from .2 above to 1.00 grade placement below expectation, neither with any clear pattern of change.

7. Notable exceptions to general trends of apparent retardation in test performance were the results of the Knox Cube and the Seguin Form Board sub-tests in the Grace Arthur Point Scale, and the high percentile ranks for word matching, word card matching, and rhyming sub-tests of the Gates Reading Readiness Test.

8. A relative stability over the three years was apparent in the teachers' descriptions of various personality traits and language facility characteristics. During each year the following responses were checked most frequently as related to the traits listed:

Traits	Responses
Cooperation	Enters freely and helpfully
Social development	Feels secure and accepted by groups
Responsibility	Assumes responsibility, carries through; applies himself conscientiously to assignments
Influence	Carried by nearest or strongest influence
Concern for others	Shows consideration of himself and others equally
Responsiveness	Responsive to most persons he contacts
Tenacity; purpose	Has definite plans, carries to completion
Creativeness	(Wide range of responses checked)
Emotional control	Emotions controlled but spontaneity allowed

Traits (continued)	Responses (continued)
Attention	Normal distractions but efficiency not impaired
Self-criticism	Has normal insight into work
Physical development	Average in coordination and physical activities
Compliancy	Complies with authorities readily
Intelligence	Average intelligence*
Teacher relationship	Relates well to teacher but somewhat independent
Class behavior	Compliant and rarely causes commotion
Talkativeness	Average amount of conversation
Understanding directions	Responds immediately
Language in class	Uses English mostly with some foreign language
Language on playground	(Wide range of responses checked)
Language away from school	No opportunity to observe
Accent	Noticeable accent
Pronunciation	Slight difficulty in English pronunciation
Word order	Occasionally reverses word order
Understanding English	Slight difficulty in understanding English
Attitude toward English	Some desire to learn and use English well
Self-expression in English	Occasional difficulty in expressing self

*A particularly interesting opinion, in view of the children's test scores.

9. The children scored higher on performance scales than on verbal scales of intelligence tests. However, even the performance test scores were below average, deviating about as much as is found for other economically low groups.

10. A suggestion concerning real versus pseudo retardation is to be found in the average scores on repeated testing. If real, it would be expected that performance might show relatively lower scores. If pseudo, resulting from language, cultural, or socio-economic factors, it would be expected that performance would improve, fluctuate and perhaps be related to cultural-socio factors. The latter types of performance more frequently occurred in this study than did a consistent lowered performance.

11. Home influences were studied by dividing the families into three groups on the basis of general attitude and aspirations of the child's parents or guardians: Positive; resignation; negative. The children from "positive" families obtained higher scores, in general, than did children in other categories on the Grace Arthur Point Scale; the median I.Q. for these children was slightly above 100. This relationship between performance and parental attitude may have resulted from 1) the fact that the social worker who did the sorting was familiar with the children and their homes, 2) realistic attitudes of the parents about their children's abilities, or 3) the possibility that negative home attitude is an important cause of pseudo retardation.

12. The usual positive relationship between performance on tests of mental ability and school accomplishment was not found. Test results for these children probably should not be interpreted apart from other information and data from individual case studies. Teachers and others who work with these children should probably not rationalize that a lack of accomplishment results from lack of native ability as measured by the usual tests.

13. The following relationships were found in studying these children in their total setting:

    a. Higher I.Q. scores in both performance and verbal tests were found for children who, as a group, represented the top socio-economic families among those studied.

    b. Higher achievement in both English and arithmetic were found for children who, as a group, represented the top socio-economic families among those studied.

c. Children from the higher socio-economic families did not demonstrate a higher achievement in reading than did children from other backgrounds.

d. No important differences were discerned in intelligence or achievement of the children when the children's families were divided on the basis of cohesiveness.

e. Higher I.Q. scores in both performance and verbal tests were found for children from smaller families, but the differences were slight.

f. Higher I.Q. scores in both performance and verbal tests were found for children whose fathers had received more education and whose families participated most actively in community affairs.

g. The definitely bilingual and the definitely unilingual children demonstrated higher performance in both I.Q. and achievement tests than did children with average or below average facility with two languages.

Attempts at rigorous experimental verifications may be pursued in later studies in order to follow through on the descriptive materials presented here. Recommendations listed in the section which follows may be fertile territory for such detailed, statistical analyses.

Recommendations for Further Study and Action

One of the criteria for evaluating the worth of research is whether it brings an air of finality to an area where it has attempted to investigate only one facet, or does it lead to further thought, study, and action in ever-spreading concentric circles of activity. Possibilities of continued work related to the field of bilingual children were abundantly apparent throughout the writing of the various parts of this study. Some of them are itemized below; the first 10 refer to some of the hypotheses listed in Chapter I which were not necessarily to be tested within the confines of the current study:

1. Reluctance to encourage learning English as a second language in many homes because of devotion to the "mother tongue" and "mother culture."

2. Reluctance to encourage learning English as a second language in many homes because of a feeling that such learning involves obligations of citizenship and participation in a democracy.

3. **The manner in which English is learned as it influences the degree of bilingualism in children.**

4. **The degree to which English is learned as it influences reactions and behavioral attitudes in learning situations.**

5. **The age at which English is learned as it influences the degree of bilingualism in children.**

6. **The manner and degree in which languages other than English are learned as they influence behavioral attitudes in learning situations.**

7. **Relationships of bilingualism and feelings of inadequacy.**

8. **The degree of bilingualism as it is influenced by letters written and received, books, communication media, recreation activities, and organizations.**

9. **Studies in degree of biculturalism and bilingualism, and interrelationships of the two factors.**

10. **Attitudes and acceptance by the child and his family of the two cultures.**

11. **Description of learning situations and experiences as a basis for comparative studies.**

12. **Description of characteristics of and information about selected bilingual children as a basis for comparative studies.**

13. **Placement of children or adults in enriched environment or in situations where another language is deliberately taught to see whether performance improves, and in order to conclude whether deficiency is pseudo or real; use of extensive statistical treatment not planned as part of this descriptive study.**

14. **Study of a group of individuals other than the experimental subjects in this project to establish common norms, and to help differentiate further the variations in test results based on verbal versus performance, individual versus group, and other factors; use of extensive statistical treatment not planned as part of this descriptive study.**

15. **Relationship of degree of bilingualism to length of residence in the United States, length of residence in a particular locality, or age of the child; use of extensive statistical treatment not planned as part of this study.**

16. Interrelationships among cultural, socio-economic, and language factors; use of extensive statistical treatment not planned as part of this study.

17. Further development of the concept in this study of attempting to hold the adapted classroom situation as constant as possible, and the effect and changes resulting directly and indirectly from the study itself and the mere presence and involvement of its personnel; possibility of using matched groups, one involved in a research study and the other not involved, measuring growth and change, and attempting to account for the influence of the study.

18. Follow-up of the total sample involved in this study, or of a selected segment.

19. Verification of various tests used in this study, with an analysis of sub-test results as part of a follow-up situation.

20. The importance of the practice effects of testing on bilingual children.

21. The influence or importance of changes in testing personnel; the influence or importance of testing personnel able to speak and/or understand the child's language.

22. A study of the values, influences, and participation of a social worker and other personnel not usually included in educational studies.

23. Analysis of teacher and administrative attitudes related to holding the classroom situation as constant as it would have been if there had been no study, rather than changing that situation because of information revealed directly from the project itself which would help individual children in the study.

24. Further analyses of the extensive case study information available in the 188 children's folders in this study.

25. Availability through publications or other media of the 1440 research briefs prepared in connection with this study.

26. Effects of adversity and frustration on learning of bilingual children.

27. Effects of pre-first grades on achievement and attitudes of bilingual children.

28. Relationships of migrant and mobile factors to bilingualism and learning.

29. Further studies in test validation based on language and language concepts.

30. Item analysis of tests on basis of language and culture; study of test items as they pertain to bilingual children.

31. Analyses of the dropout factor related to bilingual children; depth studies regarding causes, attitudes, and possibilities of reducing the number involved.

32. Studies of family cohesiveness and other relationships, and their influence on educational progress and attitudes.

33. Interrelationships of bilingual children speaking and understanding more than one language and a) the concept of foreign language as enrichment for gifted students and b) teaching a difficult second language in the first year of formal education.

34. Influences on education of poverty beyond economic poverty; investigation of relationship between economic poverty and other status factors and family situations.

35. Permanent or temporary qualities of a "limited" environment; effects on children's learning.

36. Relationships of traits such as the following, as they pertain to bilingual children and their education: Leadership; stoicism; manipulative skills; linguistic ability; family loyalty; child aspiration; parent aspiration; artistic abilities; prejudices.

The current study can answer a few questions but ask many more, solve a few problems but open the door to countless others, satisfy a few differences of opinion but create many additional ones. Piece by piece the questions, problems, and opinions will fall into place. The effort here is to help speed such activities for these children whose educational opportunities occur only once and who are frequently victims of neglect, misunderstanding, and misinformation.

By-products of the Current Study

A dividend of any research is in the unexpected by-products which may develop. Although they may not be anticipated, such by-products can contribute additional strength and continuing values to a study which in its original design may already have had a substantial quantity of both.

Among the numerous by-products of the current study are the following; it is assumed that others will evolve as the data become more widely known and used, especially in the Southwest.

Throughout the schools and school districts directly involved in this study, it has been found that a large increase in interest has developed in the backgrounds of bilingual children. In-service lectures, discussions, and courses, influences on reading and the other language arts, and the relationships between this study and local school studies of curriculum are in various stages of development.

College courses involved in the preparation of teachers who will work with bilingual children are feeling the influence of this study, its findings, and the vast area of related research it has uncovered. The values of that research will be increased immeasurably whenever the briefs referred to earlier are made available.

The importance of having aspects of this study permeate various college and university course offerings is carried to its logical conclusion on several campuses where specific courses have been designed to place emphasis on the educational needs of various categories of bilingual children. Such courses will find rich resources in and can capitalize on 1) the current research and the research briefs, 2) speakers and consultants, 3) materials prepared locally and by counties and states providing helpful curricular and other guides for teachers, 4) audio-visual aids, 5) theses, 6) panels of parents, children, teachers, and administrators concerned with educational problems and adjustments in this area, 7) opportunities for classroom observation and participation, 8) understanding of heritage and cultural backgrounds, and relationships to the areas of foreign language, 9) English as a second language, 10) child development, 11) mental health, 12) arts and crafts, 13) speech, 14) sociology, and others.

The consultants of this study made a direct contribution to it, but in an indirect manner they also aided teachers, administrators, and university staff members who were not involved in this research. Their vast background of information, research, and insight helped shed light on problems related to bilingual children in a manner that extended beyond the limits of the current project and deep into schools and communities largely untouched by the study itself.

Information regarding these children and their educational needs extended to conferences and meetings not originally planned for, and it is assumed that there will be increased dissemination of the results of this study in the future. Examples of places where details related to this project have already been reported are as follows: American Association on Mental Deficiency (regional meeting at Arizona Children's Colony); Phoenix Council, National Association for Retarded Children; Council for Exceptional Children, national conference; numerous meetings with teachers, administrators, and parent-teacher groups.

An evaluation of the research related to the field of bilingualism and also to the professional activities of social workers has revealed how seldom the skills of the latter have been utilized in studies of bilingual children in their educational and broader settings. An indirect product of the present study is that of directing attention to the contribution a skilled social worker can make as part of a team studying children and their educational needs.

Various implications can be derived from this study as they apply locally to individual schools, teachers, or children. Such implications may be in one or more of the following areas: Curriculum, materials, and techniques of teaching; school-parent relationships; test adaptations and administration; school health services, guidance, and other functions; bilingual children in parts of the country other than the Southwest, including the bilingual and sub-cultural groups in large cities; other groups of children whose teaching and administrative staffs might profit from the child study methods and materials developed here.

Final Remarks

It has often been said that the American public school is the greatest educational experiment the world has ever known. Never before over such a long period of time has there been such a consistent effort to establish an educational system based on both quantity and quality for all the people's children.

Early in this study a series of five tenets of education in this country were stated. Now that the situation of the bilingual children involved in this project has been described, the importance of these tenets can be seen in bold relief as they apply to these children. No exceptions can be made, no group ignored, no child overlooked -- and no country in its period of greatest prosperity and stature can afford to do less than recognize these beliefs as they apply specifically to each child, no matter where he lives, what his father does, what his family thinks about the educational process, or what his future holds for him vocationally.

If taken seriously, if viewed objectively, if spoken meaningfully, these statements stand as a theme of the future for these and all children:

1. **Education is for all youth.**
2. **Education is everybody's responsibility.**
3. **Education has the task of helping each child reach his greatest potentiality.**
4. **Schools are the agencies of the citizenry whom they serve.**

5. Education has the task of transmitting the quality features of the culture which surrounds it to present and future generations.

Such beliefs imply the removal of impediments, the awareness of individual problems, the belief in educational opportunity on the basis of need and ability, and the objective, careful, professional recognition of that need and ability as they pertain to each child.

To do any less is to deprive a nation of much of its underdeveloped human resources. To ignore much of the evidence now available is to use evaluative instruments and perpetuate attitudes that mitigate against educating some children to their real capacities. Whether or not the actual label of mental retardation is used, the practice of accepting the idea without questioning its validity may result in a loss to all of us of those maximal contributions that can be made only if individuals are recognized in the framework of their capabilities and potentialities.

In an era when the ways and means are available for a fair and full appraisal and evaluation of each child, it is incumbent on those in the education profession, and all who are in the broader communities that support our schools, to recognize realistically the value to all of viewing every child for what he is and can become. Such recognition demands that a constant questioning spirit be applied to the total environment of bilingual children, to the preparation of their teachers, and to new methods of child study, teaching and understanding the child in his manifold circumstances as such methods evolve in the future.

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APPENDIX A

EXAMPLES OF BRIEFS OF RELATED RESEARCH STUDIES

EXAMPLES OF BRIEFS OF RELATED RESEARCH STUDIES

In the course of the study 1440 items of literature in the area of bilingualism and subcultural factors were reviewed. As pointed out in Chapter II these were classified in terms of their having inherent in them a descriptive, valuational, or literary approach. Briefs were written for each of the items. There were 469 descriptive research studies, 926 valuational research studies, and 45 literary materials.

The descriptive research studies were considered to be those in which the investigator classified, analyzed, and interpreted his data in a given area so that he could develop meanings that would be instrumental in the solution of a scientific problem. Each brief of a descriptive research study included a complete identification of the reference and statements on the problem, procedures, instruments, methods findings, and/or conclusions of the study that were of particular significance to the present study.

Valuational research studies were considered to be those in which the investigator used information from various research studies in the field and in which he ascertained the meaning of that information by organizing it into large philosophical patterns or syntheses. Each brief of the valuational research studies included a complete identification of the reference and a list of notes of selected information and ideas of particular significance to the present study.

Literary materials were considered to be novels, short stories, poems, and so on. Briefs of these materials were written in the same form used for the valuational research studies.

To identify the source as being descriptive, valuational, or literary in approach, the symbol (D) (V) or (L) was placed at the end of each item of reference in the briefs as well as in the bibliography.

Examples of the types of briefs used in the present study are as follows:

A Brief of a Descriptive Research Study

REFERENCE

Arsenian, Seth, *Bilingualism and Mental Development: A Study of the Intelligence and the Social Background of Bilingual Children in New York City*, Bureau of Publications, Teachers College, Columbia University, New York, 1937, 164 pp.

Problem

It was the problem of this study to determine the following:

1. What is the relationship between bilingualism and certain social and economic factors?

2. What is the relationship between bilingualism and mental development of children when the "effect" of certain social factors attendant on the bilingual situation is held constant?

3. Do bilingual children suffer "mental confusion"?

4. Is the capacity for symbolic organization hampered by bilingualism?

Procedure

1. The investigation was confined to a study of bilingual children in immigrant families in New York City. There were two main experimental groups in the study -- one group of 1,152 Italian children, another group of 1,196 Jewish children. Two large public schools were selected, both with grades from kindergarten to the eighth grade. Each of the main experimental groups came from one school and one neighborhood. Instruments were administered to 3,090 children in the ungraded classes and in the 4B to 8B grades inclusive.

2. Bilingualism was considered to be "the possession or use of two languages . . . following five conditions which invariably are present in a bilingual situation" -- (a) "degrees of bilingualism," (b) "degrees of difference between two languages in a bilingual situation," (c) "age when learning the second language," (d) "method of learning," (e) "attitude toward the second language."

Instruments

The following instruments were used -- (a) Hoffman's "Bilingual Schedule" was used to obtain a measure of bilingual background. (b) The "Sims Score Card" and J. B. Maller's "Character Sketches" were used to measure socio-economic status. (c) A comparison of a child's age and grade location with the modal age for grades in day elementary schools in the city was used to measure age-grade status. (d) The "Pintner Non-Language Test" and the "Spearman Visual Perception Test -- Part I" were used to measure "mental ability."

Methods

Three methods were used for the investigation of relationship between (a) bilingualism and mental ability and (b) bilingualism and development. These methods included (a) the correlational method, whereby coefficients of correlation were calculated between the scores on the bilingual background questionaire and the scores on both of the intelligence tests for each age and group separately, (b) the comparative method -- A, whereby the "low bilingual" children (score from 0 to 6) and the "high bilingual" children (score 18 to 35)were compared with reference to their intelligence, age-grade status, and the number of siblings below age 16 in high school, (c) the comparative method -- B, whereby paired groups of monoglots and bilinguists were compared with reference to intelligence and age-grade status.

Findings

The findings included the following:

1. The extent of bilingual background did not vary significantly from age to age for ages 9 to 14 in either the Italian or the Jewish group.

2. The average bilingual score for the Italian children was larger than that for the Jewish children. The initial resistance of the Jewish group to the English language was less.

3. The average bilingual score of children from mixed marriages was very decidedly lower in comparison with the average scores of the other groups.

4. Statistically no significant differences existed between the extent of bilingual background of boys and girls in both the Italian and the Jewish groups.

5. The influence of parents on the extent of bilingual status of their children was shared equally by father and mother.

6. The native and foreign-born Jewish and the mixed racial groups had a higher average and slightly greater variability in socio-economic scores than the native and foreign-born Italian groups.

7. Bilingualism was associated with socio-economic status to the extent of correlation of -- .20.

8. The Italians showed greater school retardation than the Jews.

9. The school retardation of the foreign-born children was much higher than that of the native-born groups.

10. The correlation coefficient between bilingualism and age-grade status was practically zero for the Jewish group, and at least -- .20 for the Italian group.

11. The relationship, as expressed by the Pearson product-moment correlation coefficient, between bilingualism and age-grade status for either the Italian or the Jewish group was not changed when the socio-economic status was held constant.

12. Higher socio-economic status of families was accompanied by higher age-grade status of children from these families to the extent of a correlation of .125 to .274.

13. There were no significant differences in intelligence as measured by the Pintner Non-Language test or the Spearman Visual Perception Test.

14. The curves of mental development from ages 9 to 14 of the two experimental groups on either test were similar to the curves of mental development for these ages generally reported for other groups of children on other intelligence tests.

15. The performances of the Jewish children in these tests was superior to that of the Italian children, this difference being more evident and statistically more significant on the Spearman Test.

16. The relationship between socio-economic status and intelligence measured by the two non-language tests was positive, but very slight; r varying from .038 to .140.

REFERENCE

Sanchez, George I., *Forgotten People*: *A Study of New Mexicans*, The University of New Mexico Press, Albuquerque, New Mexico, 1940, 98 pp.

Notes

1. The great masses of the people constitute a severely handicapped social and economic minority.

2. The New Mexican often carries on inferior and obsolete practices and beliefs because he has been permitted, and forced to remain in isolation.

3. The United States census revealed that 13.3 per cent of the people of New Mexico were illiterate. When compared with other states, New Mexico ranked third from the lowest in illiteracy.

4. The special nature of the problem of educating the Spanish speaking cultural minority has never been properly recognized by the federal and state governments. Educational practices in New Mexico have been patterned after those developed in the Middle West and in the East for people and conditions vastly different from those obtaining education in New Mexico. "The selection of educational officials by popular election is a practice that is particularly incongruous in this situation. So is the district system. The use of standard curricula, books, and materials among these children is a ridiculous procedure. The language problem illustrates the inadequacy of current instructional practices."

5. The unresponsiveness of the school to the environment of New Mexican children tends to force them out of school. Most of these children leave school before they have learned enough to help them become effective in improving their environmental conditions. They leave school not only without an adequate knowledge of English but without the rudiments of education in health and work habits, in social practices and personal duties.

6. Each of the four counties with the highest percentage of Spanish-speaking population spends less than half the amount spent by the county with the highest expenditures.

7. Whereas the infant mortality rate for the nation is 51 for every 1,000 live births, the rate in New Mexico is 125.9.

A Brief of a Valuational Research Study

17. Practically no relationship -- expressed by the Pearson *r* -- was disclosed between bilingualism and intelligence for each of the five experimental groups separately, and for each age from 9 to 14 within the two main experimental groups. The *r*'s ranged from -- .217 to + 1.00.

18. By holding the factor of socio-economic status constant by means of the partial correlation technique, the earlier relationship -- expressed by the Pearson *r* -- between bilingualism and mental ability was not appreciably changed.

19. The relationship -- expressed by Eta -- between bilingualism and intelligence for the total population of the two main experimental groups, slightly higher than *r*, was insignificant. The Etas (corrected) ranged from .042 to .143.

20. No essential differences between the mental development of "low" and "high" bilinguists from age 9 to 14 was disclosed for the two natio-racial groups either separately or combined.

21. The intelligence, expressed by the intelligence quotients of the Pintner Non-Language Test, was practically the same for "low" and "high" bilinguists in the Italian and the Jewish groups separately.

22. No statistically significant difference was disclosed between the age-grade status of "low" and "high" bilingual children within each natio-racial group.

23. "Low" and "high" bilinguists have an equal number of siblings at age 15 or below attending high school.

24. No reliable differences in intelligence or age-grade status were disclosed between two groups of monoglot and bilingual children matched person per person for race, sex, socio-economic status, and age in months.

Conclusions

"Bilingualism does not influence -- favorably or unfavorably -- the mental development of bilingual children of ages 9 through 14 in the groups studied" (Italian children and Jewish children).

8. New Mexico, with a death rate of 13.8, has almost three more deaths per 1,000 of population than the nation at large. All of the ten counties, except one, having the highest death rates (from 14.7 to 22.1 per thousand) are counties where the people of Spanish descent constitute more than half the population.

9. "Health practices are often guided by medieval traditions and superstitions. These beliefs range from such matters as credence in the Evil Eye to faith in incompetent midwives and curanderos (herb doctors) -- to say nothing of homely remedies, patent medicines, and general ignorance of modern health practices."

10. "Too often the problem presented by these people today is regarded simply as a 'bilingular' problem -- one wherein language differences are of primary importance. It is much more than that. The problem is one of cultural contacts and conflicts -- one wherein traditional cultural and geographic isolation accentuate the normal problems presented by incorporation and aggravate the deficiencies of an undeveloped economy and of a frontier social structure."

11. In health, wealth, and education, the New Mexican holds the lowest position of any large group in the state. Furthermore, the measures being undertaken to remedy his condition are less effective in his case than they are for other sectors of the population. This lack of effectiveness is due to three fundamental causes: (a) the measures are not adapted to his needs; (b) his cultural inertia is greater; and (c) the measures are inequitable and tend to discriminate against him. This latter deficiency is easily verified particularly in the field of education.

12. The generally inferior status held by the native New Mexican is, in large measure, a result of the failure of the United States to recognize the special character of the social responsibility it assumed when it brought these people into the American society. Granting them technical citizenship did not discharge that responsibility. The legal right to "life, liberty, and the pursuit of happiness" is an empty privilege when the bare essentials of Americanism and of social welfare are wanting.

13. The condition of insufficiency and inadequacy under which Spanish-speaking people suffer, is an integral one and is not divisible into component parts. Remedial measures will not solve the problem piecemeal. Poverty, illiteracy, and ill-health are merely symptoms. If education is to get at the root of the problem the schools must go beyond subject-matter instruction. If the Spanish-American is to hope for a brighter future, the schools must fit him to master his environment in all its aspects. In this light, education for Spanish-Americans assumes a new significance. "The curriculum of the educational agencies becomes, then, the magna carta of social and economic rehabilitation; the teacher, the advance agent of a new social order."

APPENDIX B

SAMPLE INSTRUMENTS

IDENTIFYING DATA ON CHILD AND HIS FAMILY	Telephone

Surname	First Name	Nickname	Date of Birth	Place of Birth	Se

Family Composition

Name	Dec'd	Birthdate	Place of Birth	Race	Address	Relig
Father						
Mother						
Foster or Step-fa.						
Foster or Step-mo.						

Children (*Child Being Studied)

Name	Dec'd	Birthdate	Place of Birth	Race	Address	Relig

Others in Household

Name	Birthdate	Place of Birth	Relation	Economic Status in Home	Relig

arents' Marriage
Place:
Date:

Occupation of Family (Indicate Member)	Income	Citizenship			Time in State
			Cit.	Alien	
		Father			
		Mother			
		Others			

Education

Member of Family	Highest Grade	School Attended	Member of Family	Highest Grade	School Attended

Languages Spoken and Source of Learning

Member of Family	English	Spanish	Other	Source	Member of Family	English	Spanish	Other	Sourc

her Comments:

Date ______________________

Child's Name ______________________ Child's Address ______________ School area __________

IDENTIFYING DATA
ON CHILD'S HOME AND COMMUNITY

How long in present house _____ Rent or own _____ Am't of rent paid ______ No. rooms ________

Type construction ________________ Single or multiple _________ Gen'l. condition __________

General neighborhood of home: (describe - residential & commercial and/or industrial)

____

General housekeeping standards:

LIGHTING		WATER				HEATING					VACANT LO		
		Inside		Outside									
Elect.	Other	Cold only	Hot & Cold	Tap	Other	Gas	Elect.	Wood Stove	Fireplace	None	Many	Some	F

TOILETS		COOLING				GARBAGE DISPOSAL		FURNISHINGS			
Inside	Outside	Evap.	Fans	Refrig.	None	City	Other	Fine	Adequate	Functional	Inadequate

OWNERSHIP OF:									CONDITION OF YARD				
Car			Radio		TV		Phone						
Yes	No	Make & year	Yes	No	Yes	No	Yes	No	Grass &/or shrubs-clean	Grass, unkept	No grass, but clean	No grass, not neat	Littered with trash &/or wee

COMMUNITY

Yards			Streets			Sidewalks				
Mostly good; cared for	No grass; mostly clean	Littered w/ trash	Paved-good condition	Unpaved but good	Dirt, poor	Paved, good	Paved poor	Dirt, good	Dirt, poor	None

RECREATION FACILITIES IN NEIGHBORHOOD: (Baseball, swimming, park, library, movies, etc.)

____

____

BUSINESS ESTABLISHMENTS IN NEIGHBORHOOD: (Groceries, drugs, taverns, gas stations, etc.)

____

____

PUBLIC TRANSPORTATION

____

TEACHER REPORT OF STUDENT BEHAVIOR

Name of School______________________ Teacher______________________________

Name of Student_____________________________ Date_______________________

Please describe the child by either checking statements that best indicate his usual behavior or by a narrative description in the space provided under each area to be evaluated. Either or both may be filled out on an individual child but if the descriptive statements are checked, additional remarks by the teacher are definitely encouraged. None of the descriptions should be interpreted as ratings and one or more items may be checked in one area. If no opportunity was available to have observed behavior in certain areas, please indicate this.

I. COOPERATION

__Enters freely and helpfully into group activities.
__Takes part when he is likely to obtain satisfaction from certain group activities, but does not participate in other situations.
__Prefers to do things by himself; not likely to enter into group participation on his own.
__Does not realize the value of cooperation; does not care enough about it to try.
__Is definitely resistant to participation in group activities.
__No opportunity to observe.

Comments or Narrative:

II. SOCIAL DEVELOPMENT

__Appears to feel secure in his social relations and is accepted by groups of which he is a part.
__Appears to have some anxiety about his social relations although he seems accepted by the group of which he is a part.
__Shows some desire to be accepted by the group, but is treated with indifference.
__Withdraws from others to the extent that it prevents his acceptance by the group.
__Is rejected by all groups due to personal characteristics or behavior.
__No opportunity to observe.

Comments or Narrative:

III. RESPONSIBILITY

__Recognizes opportunities to assume responsibility and carries through to the best of his ability whatever is undertaken.
__Applies himself with conscientious effort to what is assigned to him.
__Usually carries through undertakings, self-assumed or assigned by others, requiring only occasional reminder or compulsion.
__Shows high persistence in undertakings in which he has particular interest but is less likely to carry through other assignments.
__Needs much prodding and supervision even in undertakings of moderate duration or difficulty.
__No opportunity to observe.

Comments or Narrative:

IV. INFLUENCE

__Habitually controls the activities of others.
__A leader, but will accept group decisions.
__Strongly influences the activities of others.
__In certain groups he is a leader.
What groups? ______________________________
__Is carried along by the nearest or strongest influence.
__No opportunity to observe.

Comments or Narratives:

V. CONCERN FOR OTHERS

__Shows balance in considering welfare of himself and others.
__Certain problems of the group interest him.
Which? ______________________________
__Is not interested in welfare of others unless what they do affects him.
__Talks about welfare of others but does nothing about it.
__No opportunity to observe.

Comments or Narrative:

VI. RESPONSIVENESS

__Unusually responsive to all persons he contacts.
__Responsive to most persons he contacts.
__Responsive to selected group or individuals.
__Tends to be unresponsive.
__Unresponsive, apathetic.
__No opportunity to observe.

Comments or Narrative:

VII. TENACITY AND PURPOSE

__Has definite purpose and plans and carries them to completion to the best of his ability.
__Has short time projects in areas which interest him but has no thought of long term goals.
__Usually takes things as they come, yet may be capable of serious purpose if aroused.
__Makes fairly definite plans but cannot be counted on to carry them out.
__Drifts with vaguely conceived plans which never seem to bear fruit.
__No opportunity to observe.

Comments or Narrative:

VIII. CREATIVENESS

__Approaches whatever he does with active imagination and originality.
__Makes original contributions in one or more areas.
__Shows promise of originality and creativeness but so far has not achieved distinction.
__Makes little creative contribution, yet can use ideas of others.
__Seems unimaginative and gives no evidence of originality or creativeness.
__No opportunity to observe.

Comments or Narrative:

IX. EMOTIONAL CONTROL

__Rigid control of emotions.
__Emotions controlled but spontaneity allowed.
__Very spontaneous person but not over-emotional.
__Tends to be over-emotional.
__Too easily depressed, irritated or elated.
__No opportunity to observe.

Comments or Narrative:

X. ATTENTION

__Preoccupied with work; little if any interference from distracting stimuli.
__Normal attention to other things, but not such as to impair efficiency in tasks.
__Distracted by chance stimuli or own ideas.
__Wandering, inconstant.
__No opportunity to observe.

Comments or Narrative:

XI. SELF-CRITICISM

__Over-critical of self, thinks successes are failures.
__Has normal insight into work.
__Occasional realization of failure expressed verbally.
__Occasional realization of failure expressed facially.
__Has no realization of failures.
__No opportunity to observe.

Comments or Narrative:

XII. PHYSICAL DEVELOPMENT

__Very good coordination, ability to excel in physical feats.
__Above average in coordination and physical abilities.
__Average in coordination and ability to perform physical activities.
__Below average in coordination and physical abilities.
__Uncoordinated, poor physical prowess.
__No opportunity to observe.

Comments or Narrative:

XIII. COMPLIANCY

__Complies with authorities readily.
__Complies well with authorities but has some passive resistance.
__Both complies with and rebels against authority depending upon the situation.
__Tends to rebel actively against authorities but occasionally complies.
__Continually rebels against authorities.
__No opportunity to observe.

Comments or Narrative:

XIV. INTELLIGENCE

__Very bright for age, able to solve difficult problems and gain insight.
__Above average in intelligence.
__Average.
__Below average.
__Very dull.
__No opportunity to observe.

Comments or Narrative:

XV. TEACHER RELATIONSHIP

__Forms strong emotional relationship with teacher, expresses love.
__Attached to teacher rather strongly.
__Relates well to teacher but is somewhat independent.
__Is slightly aloof toward teacher.
__Rejects teacher strongly.
__No opportunity to observe.

Comments or Narrative:

XVI. CLASS BEHAVIOR

__Disrupts class frequently, difficult to control in class.
__Disrupts class occasionally, sometimes hard to control.
__Is neither disruptive nor very compliant.
__Tends to be compliant and rarely causes commotion.
__Very compliant, never disruptive.
__No opportunity to observe.

Comments or Narrative:

REMARKS:

TEACHER REPORT OF STUDENT BEHAVIOR
(Language)

Name of School________________________________ Teacher______________________________

Name of Student______________________________________ Date_________________________

Please describe the child by either checking statements that best indicate his usual behavior or by a narrative description in the space provided under each area to be evaluated. Either or both may be filled out on an individual child but if the descriptive statements are checked, additional remarks by the teacher are definitely encouraged. None of the descriptions should be interpreted as ratings and one or more items may be checked in one area. If no opportunity was available to have observed behavior in certain areas, please indicate this.

I. TALKATIVENESS

___Very talkative; disrupts class.
___Above normal amount of conversation, but not enough to disrupt class.
___Average amount of conversation.
___Very little spontaneous speech.
___Talks only after much urging.
___No opportunity to observe.

Comments or Narrative:

II. UNDERSTANDING DIRECTIONS

___Responds immediately.
___Requests repetition.
___Pretends he does not hear.
___Responds after a little supplementary direction.
___Makes no response.
___Responds before instruction is completed.
___No opportunity to observe.

Comments or Narrative:

III. LANGUAGE USED IN CLASS

___Uses English exclusively.
___Uses English mostly with some foreign language used occasionally.
___Uses English and foreign language equally.
___Uses foreign language mostly with minor English.
___Uses foreign language exclusively.
___No opportunity to observe.

Comments or Narrative:

IV. LANGUAGE USED ON PLAYGROUND

___Uses English exclusively.
___Uses English mostly with some foreign language used occasionally.
___Uses English and foreign language equally
___Uses foreign language mostly with minor English.
___Uses foreign language exclusively.
___No opportunity to observe.

Comments or Narrative:

V. LANGUAGE USED AWAY FROM SCHOOL

___Uses English exclusively.
___Uses English mostly with some foreign language occasionally.
___Uses English and foreign language equally.
___Uses foreign language mostly with minor English.
___Uses foreign language exclusively.
___No opportunity to observe.

Comments or Narrative:

VI. ACCENT

___Very thick accent that makes understanding student difficult.
___Pronounced accent—but can understand student.
___Noticeable accent present.
___Very slight accent.
___No accent present.
___No opportunity to observe.

Comments or Narrative:

VII. PRONUNCIATION

___Experiences great difficulty in pronouncing English words and uses foreign pronunciation often.
___Uses some foreign pronunciation and has some difficulty pronouncing English.
___Some difficulty in pronunciation of English.
___Slight difficulty in English pronunciation.
___No difficulty in English pronunciation.
___No opportunity to observe.

Comments or Narrative:

VIII. WORD ORDER

___Habitually reverses order of words when using English.
___Word reversal occurs often.
___Reverses order of words only when excited or hurried.
___Occasionally reverses word order.
___Never reverses word order.
___No opportunity to observe.

Comments or Narrative:

IX. UNDERSTANDING ENGLISH

___No difficulty in understanding English.
___Slight difficulty in understanding English.
___English must be spoken slowly and distinctly for it to be understood.
___Great difficulty in understanding simple English when spoken.
___Understands very little or no English.
___No opportunity to observe.

Comments or Narrative:

X. ATTITUDE TOWARD ENGLISH

___Has a great desire to learn and use English well.
___Has some personal desire to learn and use English well.
___Learns and uses English only because it is expected of him.
___Slight personal bias against English usage.
___Great personal bias against learning or using English.
___No opportunity to observe.

Comments or Narrative:

XI. ABILITY TO EXPRESS SELF IN ENGLISH

___Experiences no difficulty in expressing self in English.
___Occasionally has difficulty in expressing difficult concepts.
___Can only express self when simple concepts are involved.
___Has great difficulty in expressing simple ideas in English.
___Unable to express self in English at all.
___No opportunity to observe.

Comments or Narrative:

CLASSROOM OBSERVATION GUIDE

Class____________________

Name____________________ Date____________________

Physical appearance (description and growth evidence):____________________

Muscular coordination (clumsy, agile, etc.):____________________

Description of child's language and reading:____________________

Behavior (participation in classroom activities and playground):____________________

(Behavior continued on next page)

LANGUAGE SUMMARY

NAME ADDRESS SCHOOL

. UNDERSTANDS				READS			WRITES			SPEAKS			2. HOW LANGUAGE WAS LEARNED			3. SPOKEN BETWEEN				
	Eng.	Span.	Other	Eng.	Span.	Other	Eng.	Span.	Other	Eng.	Span.	Other	English	Spanish	Other	Moth.	Fath.	Child	Sibl.	Peer
Child																				
Mother																				
Father																				

CONTACT OR USE OF LANGUAGE

	Child			Mother			Father			Siblings				Child			Mother			Father			Siblings		
	Eng.	Span.	Other	Eng.	Span.	Other	Eng.	Span.	Other	Eng.	Span.	Other		Eng.	Span.	Other	Eng.	Span.	Other	Eng.	Span.	Other	Eng.	Span.	Other
Letters rec'd													Movies-plays												
Letters written													Lectures												
Books read													Dances												
Newspapers rec'd													Clubs-frat.												
Other lit. rec'd													Friend-neigh.												
Radio													Stores												
Church services													Think in Foreign lang.												

1.
U - Unable
F - Functional ability
S - Some
H - High degree

2.
H - Learned at Home
S - Learned at School
HS- Learned at Home & School
W - Learned at Work
O - Other

3.
S - Spanish
E - English
C - Combination
O - Other

QUESTIONS USED IN STRUCTURED INTERVIEWS WITH CHILDREN

1. How do you like school?
2. Is school easier this year than last year?
3. Do you like school more this year than last year?
4. What do you want to be when you grow up?
5. What do you like to do on the playground?
6. Tell me about your brothers and sisters.
7. How do you feel about using English?
8. If I were a magician and could grant you three magic wishes, what would they be?
9. Do you use Spanish on the playground?
10. How do your friends feel about using Spanish on the playground?
11. Describe me.

QUESTIONS USED IN STRUCTURED INTERVIEWS WITH PARENTS REGARDING HOME AND COMMUNITY

1. What things do you like about this community?
2. What things do you dislike about this community?
3. What does your family do for fun?
4. What job in this community would you like for your child to have when he grows up?
5. Do you wish to live here for a long time? Why?
6. Give the names of persons in your community who are really interested in helping make it better. (If you were in trouble and needed help, to whom would you turn?)
7. To what clubs and organizations do you and your family belong?

IDENTIFYING DATA ON COOPERATING TEACHERS *

1-2. Name______________________________ Address______________________________

3-4. Date of Birth______________________ Place________________________________

5. Sex: Male_______ Female_______

6. Marital Status: Single___; Married___; Separated____; Divorced____.

Number of children____; Living at home____; Away from home____.

7. General Physical Health: Poor____; Average____; Good____; Excellent____.

8. Formal Education (underline highest degree):

Degree	Where	Year	Major	Minor
B.A.				
M.A.				
Ed.D.				
Ph.D.				

List of classes beyond highest degree	Year	Where

9. Years of Educational Experience:

	Position Held	School Location
Teaching		
Administration		
Other (Please be specific)		

Total Years' Educational Experience: ______________________________

*These data will be handled anonymously. You, as a person, will not be identified.

10. Other Vocational Experiences (be specific):_______________________________

____.

11. Years of Residence in this state:_______________.

12. Years of Teaching and/or Administrative Experience in this state:___________.

13. Membership in Educational Associations. Identify each: Local, County, State, and National.

A. ____.

B. ____.

C. ____.

D. ____.

14. Membership in the School's Community Organization and Groups:

A. ____.

B. ____.

C. ____.

D. ____.

15. Do you plan to continue teaching?______________________________________.

If not, explain. ____

____

____.

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Appendix C

Excerpts from Correspondence and Meetings with Consultants on Research Study

Excerpts from minutes of staff meeting with Dr. Edgar Doll, November 1, 1957 -- ". . . Dr. Doll stressed the fact that in addition to achieving our immediate goals, or scientific results, we can anticipate reaping 'fringe benefits,' which are sometimes much more significant in the final analysis. Besides improving the outlook on education generally and improving the methods for helping children, we can expect benefits accruing to individual workers -- enlarging their own professional experiences and getting to know each other better.

"A discussion period followed, beginning with the question, 'What are some of the key problems we may be facing in the next year or two?' Dr. Doll's answer was basically this: Although we start out with bilingualism as a theme, we may discover that the final results may be a refinement of biculturalism. In other words, we will be aware of the cultural aspects of bilingualism.

"He added that he was very favorably impressed with the teachers and classrooms visited during the day. The students were not self-conscious and there was a wholesome and healthy atmosphere in the . . . rooms.

"He made the observation that these children may start out well, but slow down more rapidly than Anglo children do; this is due to the fact that Mexican children reach an earlier maturation. For this reason, he felt he saw more enthusiasm in the first grades than in the second. He pointed out that there are, of course, exceptions to this generalization.

"Dr. Doll said he feels it is a challenge to educators to get these children to make use of the education they have already gained. He deplored the fact that children are pushed to read before they are ready. In fact, it is his belief that the 'greatest educational sin is premature instruction'; that is, teaching arithmetic without number experience, reading without the knowledge of language. 'Don't keep him from reading; just don't force him. Be patient.'

"The point was made that it is confusing to use the term 'bilingualism,' when actually these children are very limited in their command of either Spanish or English. Dr. Doll said we might more appropriately refer to this condition as 'confused-lingualism.' He felt that this is not basically a language problem but rather a cultural or social problem.

"The end of the meeting was reached with this interesting and challenging question; 'Would these children be different if we met them in Mexico, being taught by Mexican teachers?'"

Excerpts from series of meetings with Dr. George I. Sanchez, March 20-22, 1958 --

"Dr. Sanchez was asked how the teachers could bring school and home together more effectively for the Mexican children. His first suggestion was that of teaching the home language in the school. He felt that including Spanish in the curriculum would give more prestige to their language, thus helping them both with their native language and English and also bringing teacher and pupil closer together. Another suggestion was to give status to things done in their homes by such means as occasionally serving Mexican food in the schools or by asking the parents how to do things pertaining to their own culture.

"Another teacher asked what problems the Mexican children face, coming to Anglo schools, of which we may not be aware. The reply was that it is a shocking experience for these children to come to school for the first time, especially to foreign surroundings in the midst of an unfamiliar language. Dr. Sanchez said it would help if there were someone who could communicate directly with them. However, he said, there are those who are able to communicate even though they do not speak Spanish.

"Some of the characteristics of these children were noted by Dr. Sanchez:

"They are more 'clannish' as the result of being the minority group. The child has learned not 'to stick his neck out' and prefers to operate in the group rather than as an individual. (It is not that individualism is unknown in Spanish historical background; it is rather that these people's present socio-economic status causes this reticence.) They have a strong feeling of group loyalty, and resist greatly any attempt on anyone's part to 'Gringo-ize' (Anglo-ize) them. In any folk culture, Dr. Sanchez said, intra-family loyalty becomes stronger; loyalties are learned from being pushed around by the dominant group.

"Someone asked whether it is wise to try to Anglo-ize them, to which Dr. Sanchez replied that there are two alternatives: either their assimilation into the Anglo culture, which would mean the obliteration of their own culture; or the acculturation process which suggests a give and take between the two. He prefers to see the latter method materialize. He added that a reason for their resistance to assimilation is that they are not immigrants since their ancestors have been in the Southwest for many generations. They don't have the impelling drives which some of the European immigrants have to become 100% Americans; they have no desire to get rid of their language; they are not outsiders and resist an attempt at being made anything else than what they are.

"One of the teachers wondered about the fact that at about the seventh grade they are proud of their Spanish ancestry but not of any Indian ancestry. This was explained by the fact that Indians have been spoken of disparagingly for a long time, and it will be necessary to re-educate both Mexican and Anglo children in this respect.

"Another interesting characteristic pointed out by Dr. Sanchez was the remarkably strong loyalty of the Mexican-Americans of the Southwest to the United States in time of war or in the case of any attempted infiltration on the part of a foreign group such as the Communists or Nazis. They have proved themselves to be highly resistant to this type of subversiveness, since records have shown that these groups made absolutely no headway when they attempted to infiltrate into certain Mexican groups.

"Another item discussed was the problem of school 'segregation,' or isolation, and how best to teach the English language in such areas. Dr. Sanchez's opinion was that there is nothing wrong with Negroes or Mexicans going to school with other members of their race, but to compel them to is legally, morally, and psychologically wrong. Another mistake, in his opinion, is to make them speak English in school. 'Let them speak Spanish. Also encourage them to speak English. . . . they may speak more English voluntarily. If Spanish is made inferior. . then they will deliberately want to speak it.' He said educators have been ignoring a basic principle known in the history of education for 2500 years by disregarding the vernacular of the region. . . . .

"Concerning the observation regarding the lack of physical movement of the children during testing, Dr. Sanchez's explanation was that this trait is common due to the strict discipline in the home. Children closer to the folk culture are held under control more; this is also true in Indian culture.

"When asked about the activities of teen-agers, he said they imitate the activities of the same age level of the dominant group, except everything is exaggerated. They also sometimes resist controls and make their own rules. He explained differences in behavior of young people of the two cultures by saying simply that each one stresses different roles for its children, thereby producing different traits in them.

"In explaining the apparent lack of motivation noticed in testing, Dr. Sanchez answered in this way: Spanish-speaking peoples have had a relatively short tradition of literacy. Most have not had the remotest possibility of being educated until recent times. The tradition of education is almost non-existent; they are not sensitive to education; academic things do not challenge their interest. He felt that one way to increase their motivation toward education might be to introduce crafts, or to seize upon local opportunities to give children projects to work on.

"He feels our sample children are perfectly normal, and in a way we really are evaluating the progress of our educational offerings, not that of the children.

"Dr. Sanchez commented upon the excellence of the teachers as he saw them in the classrooms. He liked the 'lack of apologetic manner' among the teachers . . . as is sometimes found in situations similar to theirs.

"He suggested we settle on one term to use as to the 'race' of our subjects. In some localities this is a real source of hurt feelings. He said the arrangement he had used successfully was this: However, he said that people in different localities react differently and that we should try to find which is preferred. . . . .

RACE		
White		Negro
Anglo	Latin	

"Dr. Sanchez said that we limit ourselves too often to the here and now and give too little attention to the historical perspective. It is very important for the teachers to be armed with the knowledge of the cultural background of these people to be effective teachers. (He stated that a knowledge of the history of the Yaquis is important to really know Community A.) More emphasis should be placed on the 'how come' phase of their development rather than on the 'what is' at the present. In other words, try to find out what has made them the way they are; then put this information to work for us in helping to improve our methods of teaching them.

"In trying to explain their attitude toward our economic system, it was noted that the closer people are to a folk culture, the closer they are to a barter situation. To them, barter was used for the necessities of life and 'hard money' was reserved for the luxuries. One way to learn about a group, then, is to investigate the meaning of money to them.

"Another trait found among these people is their philosophy of fatalism. Spanish Catholicism is much more austere and dominant than Roman Catholicism, thus instilling a feeling of 'what is to be will be' and 'in this world you suffer and take things as they come.'"

Excerpts from letter received from Dr. George I. Sanchez, dated March 27, 1958 --

"In Schools B and C I was much impressed by the sincerity evinced by all of the staff with whom I came in contact. The principals gave every evidence of competence, understanding, and real liking for their jobs. It was a pleasure to talk to them. I suppose it is axiomatic: good principal, good school. And these were good schools -- at least those portions that I observed. I saw some very good teaching; and stimulating teachers, of course. Though they recognize the 'problem,' there was no expression of what I call the 'alibi psychology' or of that paternalism that is often used as a substitute for real understanding and hard work and a square deal. It was refreshing and stimulating to see these people in action. I gathered that these school teachers and principals believe with me that what their youngsters need, and what all other underprivileged children need, is more and better good teaching -- not some mysterious formula, not some unique materials or methods, not some vague kind of special education. This is very wholesome. With this perspective these already good teachers will continue to grow professionally and do a progressively better job.

"I wish that I could document photographically and otherwise the wholesomeness of the inter-racial and inter-cultural situation that I observed in both schools. Here, indeed, are models of integration. I recommend that more be made of this fact, both in reporting to others and in the advisement of teachers, principals, supervisors, etc. The school curricula, already well-oriented as respects these resources, could well do even more in that direction. Teachers and principals might undertake a study program, with or without college credit, that would give them more information -- about 'Mexicans,' about Indians, about the Church, and so on; through History, Anthropology, etc. I think that these educators are ripe for more education of that kind, and they would use it advantageously. In addition, I think that all of these children should be learning Spanish. My views on that are well known, so I will not attempt elaboration here.

"You know, I envy and admire the people of . . . They have provided kindergartens in their schools, and they have provided for those schools so well that their administrators can arrange to keep class size in these two schools (I have no information on the others) to around 25. This is practicing what many of us have preached for years. We know that kindergartens are good for all children, and we know that class size should be held to 25 or less for all children. We also know that these procedures, good for all children, are better for those who are handicapped as a result of socio-economic circumstance, because of foreign home-language, or through a combination of the two. I think that you should do more in discussing and reporting the place of the kindergarten and small class size in this program. I would like to see test results here contrasted with test results for 'bilingual' children elsewhere who have no kindergarten background. Or, contrast these 'Mexican' children with other such children where class size is much larger. Or combinations of the two factors. Without taking anything away from the staff of these two schools, I am sure that many of the things that impressed me so favorably there are direct products of kindergartens and small class size. As I suggested orally, do more evaluation on what goes on in the kindergartens that feed these schools. While it is obvious that they are accelerating the education of these children, maybe more could be done. Incidentally, you will recall my statement that it is my conviction that, in these United States, what we need most in education right now is to take children into schools at a much younger age. If we are not going to do it for all children, at least let us do it for children who are handicapped by their environment. . .

"The influence of your staff on these schools is a very good one. It cannot but change and improve education there, though, for the moment, you may consciously seek to avoid modifying the process. I must say that you and your colleagues impressed me not only by your technical competence but by your good sense -- your unwillingness to couch your views in jargon, your avoidance of generalization from limited data, your search for the simple and logical interpretation. It is so easy in this field to make things appear complex and mysterious, it is so easy to read involved and seemingly profound interpretations into what is really a two-plus-two operation. I was much pleased that you and your staff are of the other school. This, as much as anything else, made my visit with you a real pleasure."

Excerpts from series of meetings with Dr. Herschel T. Manuel, December 3-6, 1958 --

"He felt that adequate testing in the study would present special difficulties. He spoke briefly of his experiences testing Puerto Rican children with general mental ability and non-verbal and numerical tests. His hypothesis had been that their scores would be more nearly equal to the scores of continental children on the non-verbal tests than on the verbal. However, at the college freshman level the opposite condition was found; the scores of freshmen at the University of Puerto Rico were about equal to those of freshmen at the University of Texas on the verbal test but lower on the non-verbal. Both groups of students were tested in their own language - Puerto Ricans in Spanish, continentals in English. This experience as well as theoretical consideration suggests that there may be more difficulties than investigators have realized in using the results of non-verbal tests as measures of the ability of different linguistic and cultural groups.

"In general, Spanish-speaking children in the Southwest, he thinks, have a double language handicap. Their experience in and out of school is inadequate to develop normal competence in either language. There is some evidence that in the third grade they will respond to individual intelligence tests about as well in English as in Spanish, but at a lower than normal level in both.

"The test scores of children are influenced by cultural background. This is obviously true in relation to information, skills, and vocabulary. It is probably also true in attitude and motivation in the test situation. It is said, for example, that Spanish-speaking people of the Southwest live for today rather than tomorrow.

"Dr. Manuel believes that the retardation of Spanish-speaking children now in the schools is not a pseudo retardation but is real and will persist, and the child 'will fall farther and farther behind -- what depressed him on the test will depress him on later learning.' He said what has already taken place during the first six years cannot be undone and the child never completely recovers from this deficit. He lists as reasons for this retardation (1) their socio-economic status, (2) lack of cultural opportunities, and (3) language experience. With regard to their language ability, he stated that a large vocabulary in one language is better than a small vocabulary in two languages. And when a Spanish-speaking child starts to school and is not allowed to speak his native language, 'that in itself is almost a trauma' and creates further a feeling of inferiority.

"Dr. Manuel explained briefly the objective of the study in which he is presently involved. He is working under a grant from the Hogg Foundation and hopes to produce a manuscript describing the present status of the cultural group along the Rio Grande. He is attempting to describe the position of this group as a result of the two cultures mixing - with an emphasis on language problems. His hypothesis is that in the long run language is the crucial factor in the culture of these people. One of their difficulties is their low socio-economic status and the many problems which accompany it, but 'if we can deal with the language problem we can deal with the other.'

"Dr. Manuel was asked the question: What do you mean by 'retardation' with respect to these Spanish-speaking children? He replied that he meant abilities, or lack of abilities, in relation to other (non-Spanish-speaking) children's abilities. This child's low socio-economic level has hindered his growth permanently and he will never accomplish what he could have accomplished had it (his economic level) been higher and his language difficulties less severe. He has an indelible scar - a stunted growth. He believes it is a small percentage of adults who excelled and who came from poor circumstances. He illustrated this point by saying that of the population of El Paso (according to the telephone directory) which is approximately 60% Spanish-speaking, only 10% to 15% of the physicians of the city are Spanish-speaking. . . This does not mean that the Spanish-speaking children of the future are doomed to poor achievement. On the contrary, with improvement in socio-economic status and better language opportunities there has been and will continue to be a rise in achievement.

"In all three cooperating schools, Dr. Manuel emphasized the fact that they were engaged in 'an important work,' referring to our project. He mentioned that he felt our study would amount to 'a classic in bilingual literature.'"

Excerpts from letter received from Dr. Herschel T. Manuel, dated December 18, 1958 --

"Will you please accept for yourself and extend to Dean McGrath, Dr. Richardson, Dr. Heimann, and others who were in our conference an expression of my appreciation of the kindnesses extended to me a few days ago. I feel that our conference and the other opportunities which I had have been quite helpful in my study. I was impressed by the experiment which you are carrying forward, and I shall be interested in the outcome.

"Mrs. Miltenberger (social worker) and Mrs. Ralston (secretary for the study) were most kind and helpful. As I have already stated, the material which Mrs. Miltenberger is assembling is in my opinion of sufficient importance to justify a publication in itself. I hope that it may be made available to other students."

Excerpts from series of meetings with Dr. George I. Sanchez, April 14-18, 1959 --

"During Dr. Sanchez's visit to the various schools the following ideas were advanced on how a school can be made better for bilingual children:

1. The teachers should be carefully selected.
2. The size of classes should be reduced.
3. Teachers need not understand or speak Spanish. They will get along all right if they are 'good teachers.'
4. The schools need to help the 'dominant group' gain appreciation of the culture and background of the 'minority group.'
5. There is a need for enrichment of curriculum.
6. What is good for the Anglo is also good for the Mexican.
7. There should be no differential treatment of the minority culture by the majority culture.
8. There is a difference between the 'home' and 'school' environments. This results in a resistance of the children to take part in school activities. There needs to be more appreciation on the part of the school of the home. For example, the foods of the home should be served at the school.
9. Some administrators say they have special problems with the Spanish-speaking child, but they do not enrich his environment -- do nothing to make it better.
10. Schools can go 'overboard' in the matter of trades training. Dr. Sanchez says such a program penalizes the child who really wants and needs a strictly academic program.
11. A child can speak English and still have a terrific handicap. This is because in the Spanish language there are several words for the same noun. For example, the word 'apple' is different when it is spoken of as being on a vendor's cart and when it is being eaten or has been eaten.

"Dr. Sanchez emphasized several times that the Mexican does not have the compelling motive to become 'Americanized' that immigrants to the country have. Dr. Sanchez further felt that this is one of the distinguishing characteristics of this bicultural, bilingual group.

"Dr. Sanchez emphasized over and over the need for understanding by the schools of the Mexicans. He asked several questions: 'How do these people tick and why? Who are they? Are they one thing to one person and another to another person?' . . . . .

"He was much impressed with the progress of the children at School A with respect to their social attitudes. He found them much more at ease and less reticent and retiring than when he visited them last year. They also were quite uninhibited in their responses in Spanish when he spoke Spanish to them. He said these changes in behavior no doubt resulted from their contacts with the people in the study during the past two years.

"Another factor which favorably impressed Dr. Sanchez was the apparently growing recognition among the teachers that the problems of the bilingual pupils are not predominantly of language but of socio-economic circumstances. He feels that this, too, may be due to the work of the project. The bilinguals' difficulties arise not because of a 'mystical and mythical language problem,' not because they speak Spanish, but because of their socio-economic handicap.

"Dr. Sanchez feels that language problems arise when teachers, in their effort to teach English, treat Spanish as a culprit to be thrown out. But if the child is taught that the Spanish language is to be respected he will have a more healthy attitude toward English. He cited an example of this theory by telling of schools in Puerto Rico which were teaching the basics of Spanish as well as English, and were finding that this also helped the pupils to learn English.

"'There is nothing to build on with a dual language handicap.'

"'The vernacular needs to be encouraged.'

" He commented favorably on a teacher in School A who is having her students teach her to speak Yaqui.

"A discussion arose which involved the code of ethics our bilingual population embrace which has been handed down to them through generations. There often exists among them a conflict between what we call norms of good behavior and their loyalties to their inner culture. If the home and the school (dominant culture) are so far apart and the child is not accepted in the dominant culture and yet he rejects his own background, the result is that he will likely flounder in the middle ground ('limbo culture'). Juvenile delinquency is often the result of this situation.

"Teachers for these children should be picked who are not aloof to the bilingual's culture. The Anglo teacher could not possibly know the Mexican child unless she knows his background and the problems peculiar to being of a minority group.

"Dr. Sanchez felt that the Anglo culture should be dominant but not exclusive. These children should emerge as Americans plus, should possess majority culture plus the benefits of the minority."

Excerpts from letter received from Dr. George I. Sanchez, dated April 30, 1959 --

Some notes on my recent visit.

"I am very favorably impressed with the growth evidenced at School C, at the enthusiasm of the faculty, with the sincerity and wisdom of the principal, and with the freedom and ease evidenced by the children. This is a good school. Too bad that class size is increasing. While your project is reportorial and not remedial, it is obvious that much remediation stems from it -- and I see it expressed in its best form at this school.

"In School A I see a better spirit among the children, and some of the teachers no longer seem to feel so isolated and forgotten. I saw some good teaching, I talked with kids that weren't the frightened and terribly shy youngsters that I talked with last year. They were 'free' in Spanish, and they were certainly not as hesitant about Yaqui as before. They were tickled pink that I remembered tutula ('pretty'), and so on. This is an improved school.

"It is always satisfying to meet with the university staff. You fellows have developed a project here that can have great significance. When I was first called in I was skeptical, and I told you so. I questioned the 'mental retardation' feature, then so prominent. It is much to your (staff) credit that the project has developed into a truly exciting undertaking. It is a real pleasure to work with a team that grows so well so quickly. Probably symbolic of the wholesomeness of these developments is that Dr. Richardson and Dr. McGrath are not too busy to devote a lot of time to the project -- or, maybe I should say that that is indicative of why things have gone so well.

"As a final word, Willard, heartiest congratulations for your leadership in a very worthwhile project."

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APPENDIX D

OBSERVATIONS ON TESTING

Because of the special nature of the population in this study, attention was paid to the specifics of the situation involved in testing. The following excerpts are taken from typescripts of oral reports of the psychometrists at the end of each year of testing during the investigation.

Observations on testing - first year (Arthur and WISC)

B. "What these youngsters will do on the Picture Completion sub-test is to give you some strange answers. For instance, on the item of the table with the leg missing. . . In Spanish the leg is called 'palo' and when you translate that from Spanish to English it comes out 'stick.' The response you often get is 'stick' for 'table;' that this raises some difficult problems in scoring is to say the least. If you encourage them to point and to verbalize, you often get more information that way.

"Another interesting thing at School A, despite the fact that they are desert children, they know what an umbrella is because the teachers brought umbrellas to school one day to show them. But on the Picture Completion question with an umbrella which has a part missing, they showed their real unfamiliarity by not realizing what was missing. Since it's a rural community, many of them got the item on Picture Completion of the missing hoof of the cow, which is really quite advanced. Very few got the thermometer item which is regarded as easier. Similarly, many of the children got the missing spur on the rooster. This is simply illustrating the need to be aware of these quirks imposed by their culture.

"On Picture Arrangement, I started out with the easy ones to gain rapport and give the youngsters a little confidence. Whenever they were undecided, I put in the 'Fight' series of pictures which are the link between the easy series and the more difficult series."

A. "You were depending on the child?"

B. "Yes, depending on the child. If he knew exactly what he was doing, I would skip the 'Fight' series. But I started out with all of them, A, B, C, D, and if they looked a little unsure, I'd throw in the 'Fight' series as an added thing. I tried to go for three misses unless I saw they were completely lost. A lot of them in School A got the 'Farmer' series; if they missed the first two, I gave them the 'Farmer' series anyhow. There's not much agriculture near Schools B and C, so there's not so much of a problem to worry about as in A where they're pretty close to agriculture. More of the youngsters in School A seemed to miss the 'Fire,' where they never had anything to do with the fire engine. They missed that but seemed more often to get the 'Burgler' and sometimes the'Farmer." So, of course, one has to feel his way and see what the group does on items that have this cultural impact.

"On Block Design, I didn't see so much of this spotty performance. It generally seemed to follow more true to form."

A. "You don't feel that was as culturally dependent?"

B. "No, I don't think it was. Generally with two or three misses you're on pretty safe ground. Sometimes I went as far as three, depending upon the child. On Object Assembly, it seemed to take a minimum amount of instruction; they knew what they were going to do. The 'Face' was particularly difficult for the children in the rural village, A. I generally started them out with Picture Completion and took them right in order. I experimented a little bit, but didn't find too much difference. Probably Object Assembly or Picture Completion would be the two scales of this test that I would favor the most.

"On Vocabulary, of course, it's like pulling teeth to get them to come out with what you want. The main trouble I ran into there was scoring. For instance, they'd all seen Zorro and knew what a sword was, and they could demonstrate it, but they couldn't verbalize it. I ran into strange things. . . I don't think any of them knew what a cushion was. They don't have cushions."

A. (Picking up a test record) "This one identifies a cushion as something to put pins in -- a pin cushion."

B. "Yes, but I think that's an unusual response, because there were very few who got that. I was never even able to get them to verbalize it in Spanish; they were very hesitant about that."

II. Observation on testing - second year (WISC).

"On the whole the children were very friendly and eager to be tested. Rapport was easily established. At School C the children particularly seemed to feel it was a special privilege to take the test and they crowded around me whenever they had the opportunity, asking when they would have their turns.

"I spoke only English and the children responded only in English. On the Vocabulary Test, two or three of the children responded in Spanish when they could not think of the English definition. However they would use English again when I explained I did not speak Spanish.

"The Vocabulary sub-test does not appear to be a valid measure of the words they know and can use. Subjectively, I felt they knew many words although their definitions did not seem to meet the standards of either one or two points scored. The responses were typically concrete and functional; for example: 'A knife is what you cut turkey with,' or 'what Zorro uses.'

"Many of the children approached the Object Assembly subtest tasks in a trial and error fashion. They gave the impression they were not familiar with the puzzles. Further illustration of the difficulty with vocabulary can be observed with some of the common missed definitions such as:

Stanza - you stand
shilling - when you're cold
nuisance - you get some "noose"
hero - your husband; a man who talks in another language
microscope - you can talk in it and hear
nitroglycerine - be dark at night
spade - you go fast
gambler - a boy gambles with a girl when they go riding at night

III. Observations on testing - third year (Arthur Scale)

A. "Tell me a little bit about your experiences in testing. Would you like to discuss it from school to school, and then maybe give me a summary?"

B. "Speaking in general, I got the impression that most of the children seemed to remember the testing situation; they seemed familiar with some of the tasks and some of them would even presume as to what to do, and they'd want to get it done a little quicker. On the whole, I think there wasn't any specific subtest on the Arthur that they did markedly well on above the others."

A. "Did you seem to find much test learning? For instance, when they approached the Mazes, did any of them say, 'Oh, yes, I know this,' or 'I've done this before'?"

B. "Some responded this way verbally. It may be that this was true in some instances. In School C they seemed to have very little difficulty as far as the instructions were concerned. In other words, when I gave them the instructions, they comprehended almost immediately and responded in that fashion. However, in other schools, I had to give a lot of supplementary directions to give them the idea. I think as far as pre-learning is concerned, the children in School C had more of that as far as response of the test situation was concerned. That is the school in which we had one girl with the highest I.Q. They had some pretty high over-all scores. The question came into my mind: How much had the earlier testing carried over? As the testing went on, I questioned my own evaluation in the sense that I was taking into consideration the fact of how much learning had taken place prior to the test. For instance, the example came to my mind: If we had an eight or nine year old for the first time in that school setting, how well would he do in comparison to another person who had taken the test twice previously?"

A. "Well, now, this was the third individual test; was it not?"

B. "Yes, and as the testing continued, I felt stronger about this, especially as we went to Schools B and A, where the overall I.Q. scores were a bit lower. The feeling I got was that they wouldn't do much better -- in fact, some of them probably were doing better than they might ordinarily have done had they not had the previous testing."

A. "You feel this is related to the concept of testing with people of these cultures then? That possibly some cultural expectation enters here?"

B. "Yes. Now going back to School C, I found very good persistence in the test performance of these children. Quite a few I.Q.'s above 110 and even four above 120. These children were very quick and exhibited good persistence; their attention was very good and they seemed to be very interested in the testing situation as well as being able to anticipate some of the instructions."

A. "Did you seem to feel there was a marked variance in performance by schools?"

B. "Yes. For instance, in School A they were markedly higher on the Knox. At B the highest was the Seguin form board."

A. "You might speculate that the children in School A would like that sub-test."

B. "But they didn't; it was their approach. At least I had the feeling that they might be approached at that way. They lacked aggression at School A. They were more docile, and I think that affected their approach to the form board. According to the instructions, 'I want you to put these back as fast as you can.' At School B some of them wouldn't even stand up; they would just hold the form board pieces in their hands and then charge ahead."

A. "At School A, you didn't see this sort of aggressive behavior?"

B. "No, and this was indicative again of their being docile. For instance, on the stencils where there was a four minute time limit and the children knew they couldn't get it, they would just sit there. They would not indicate they were finished or give up -- they would just sit and hold the pencil."

A. "They wouldn't give up?"

B. "No, they wouldn't give up but just sit and hold the card, maybe try in sort of a half-hearted manner. They wouldn't give up and they would go to the extreme time limits, whereas in Schools C and B, some of them would try and if they couldn't get it in maybe 30 seconds to a minute they would say, 'I can't get it' or 'It's too hard.'"

A. "You feel, then, that in terms of class performance the children at School A showed some differences with the other schools?"

B. "Yes."

A. "Did you find any children that were deeply upset by their test performance who cried or showed any withdrawal behavior at all of any significance?"

B. "No, not at all."

A. "They took it pretty well?"

B. "Yes. There were some children at School A who were a little anxious -- one girl particularly was very anxious to get out of the testing situation, but this was unusual."

A. "Did you have any communication problems in which you thought they didn't catch on to instructions because of lack of English?"

B. "No."

A. "We found this the first time around, but they were in the first grade at that point."

B. "Well, of course, on the Arthur you shouldn't have to say anything to them."

A. "Yes, that's the beauty of it. You could do it pantomine."

B. "Some cases, as I have mentioned before, need supplementary correction, as it might have been they didn't understand. As an example, where there was a misinterpretation of directions, as in the Mazes, I sort of traced the line without marking it, then I would make a little dash for them to begin and some of them would try to do it all in dashes, all the way through as I had done. In other words, they had done exactly as I had done in a very rigid manner."

A. "A very functional operation here."

B. "Yes. I wanted them to make a continuous line and I had to call them back to explain that. Another indication of this is as I mentioned at School A. Each child was introduced to me by the child who had just finished the testing. They went out and got the next child, brought him back, and introduced him to me. They were very polite, very easy to handle, and actually it was a very enlightening experience. I have never been in any other school where they have done this. It seems to be an important thing to them and they found great delight in it."

A. "Did you feel that there were any mentally retarded children by the usual definition? Were there any unable to function well and by I.Q. standards, below 70, for instance?"

B. "No, even though there were a few with an I.Q. a little below 70, I don't believe that they were retarded."

A. "You didn't get the feeling of any really retarded then, unable to grasp directions and so forth?"

B. "No. The ones that you would suspect on the basis of lack of verbalization where it would make it more difficult for you to get this feeling would be in School A; still they responded in such a fashion. You see on the Knox Cube test which is a measure of attention they did very well. They followed the pencil, followed the combination that they have to do to lead you to believe that. It would be difficult to believe that anyone was mentally retarded in that sense, and if anyone having any difficulty as far as their functioning ability would be more prone to aim at a behavioral sort of thing with them."

A. "In the first year with the Arthur, we felt that the Knox and the Stencils did not have sufficient lower limits, that one passed too rapidly on to difficult items. Do you have any observations to make here?"

B. "Well, they all have some difficulty when they have to use more than two cards. Some of them you have to show how all the way through and they never do get it. Where there were initial successes and they got the first three quickly, say 8-10 seconds, the minute they got to the fourth one which was depth, they were completely lost. That stopped them right there. In the scoring standards of the Stencils, if you don't go beyond that third one, you're not getting much of a score; you're down to four and a half, five, five and a half years mental age."

A. "Are there any other generalizations that you think we should record?"

B. "No, only the thing that I've said before. I would like to go back to schools B and C and do something with a Binet with these kids. I think that they would have enough command of the English language to profit by it now that they are a little older. I must say they were very easy to handle and very cooperative."